Northern California's Computer Magazine

Apr. 13, 1992 • 94

FREE

MicroTimes™

SunSoft President Ed Zander

MICRO MARKETPLACE

Special Advertising Section for Bay Area Computer Buyers Starts on Page 76

Sun Meets Intel

Workstations In Corporate Computing

SunSoft President Ed Zander:

"As Intel upscales its instruction set for more power, people are building some very demanding 486-based, multiprocessor-based Intel machines, and they need an operating system to run. They can't run DOS and Windows on a 486, it just doesn't do anything. You need multitasking, you need networking, you need multiprocessing."

Story starts on page 64

The World Of Photoshop

"For Mac-based image editing, Adobe Photoshop sets the standard. No other program has Photoshop's range of functions, ease of use, and cadre of devoted users." Story starts on page 198

Peer-To-Peer Networks

"A rapidly growing number of small organizations are discovering and proving that networks do not need to be expensive or difficult to install and maintain to be useful." Story starts on page 43

Savings Headquarters

FRY'S AND HP KNOW HOW TO MAKE WAVES!

HEWLETT PACKARD
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY.
HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

Vectra 386SX

16MHz 80386SX
2MB RAM Expandable To 8MB On Motherboard
5.25" 1.2MB Floppy Disk
EMM/386 Utility Software
Serial/Parallel Ports
Clock/Calendar
IDE Hard/Floppy Disk Controller
Enhanced Keyboard
#1593112

Monitor not included

$1295

Vectra EISA 33MHz 486

33MHz 32-Bit i486 Based Processor with Integrated Coprocessor
EISA Based, 32-Bit I/O Bus:
Fully Compatible with OS/2, MS DOS 4.01, SCO Xenix System V and SCO Unix System V 386
8 EISA Accessory Slots:
6 Half-Height Mass Storage Shelves
5 1/4" and 3.5" Flexible Disk Drives Supported
Standard VGA and High-Resolution Video Solutions Supported
Clock/Calendar • Serial/Parallel Ports • Mouse Port
Monitor Not Included #1567601

$5499

HEWLETT PACKARD
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY. HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

DeskWriter Inkjet Printer

LASER QUALITY FOR THE MAC

300 DPI • Variety of Fonts & Font Sizes
Appletalk Interface • Whisper Quiet!

$398

#1502837

HEWLETT PACKARD
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY. HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

DeskJet 500C PRINTER

COLOR INKJET OUPUT AT 300 DPI!

Prints in Color or Black and White
Parallel/Serial Interfaces • 100 Sheet Paper Feeder
Whisper Quiet • 3 Year Warranty
#1632480

NEW FROM HP!

$698

HEWLETT PACKARD
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY. HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

NEW FROM HP FOR MACINTOSH!

LaserJet III PostScript™

Resolution Enhancement Brings Out The Best In True Adobe™ PostScript™
8 Pages Per Minute • 2MB RAM
Appletalk/Serial/Parallel #1616787

CALL FOR BEST PRICE ON THIS POSTSCRIPT™ VALUE!

LASER TONER CARTRIDGE

FOR
HP IIP & IIIP
LASER PRINTERS
92275A #1481426

$66.98

HEWLETT PACKARD
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY. HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

LaserJet IIP+

Personal Laser Printer with the fastest "Business Speed" in the business!

4 Pages/Minute • PCL4 • Parallel Interface
512K Expandable to 4.5MB • 70 Page Input

$788

#1625930

HEWLETT PACKARD
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY. HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

LaserJet III

PCL-5 PRINTER
Language with Resolution Enhancement™
Means Built In SCALABLE Fonts!
Font Rotation-Landscape Mode
1MB RAM • 8 Pages Per Minute

#1496561

FALL INTO OUR BEST PRICE YET!

HEWLETT PACKARD
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY. HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

1MB MEMORY BOARD

HP 33474B
1MB Memory Board for the HP IIP, III, IIIP and LaserJet Fax.

$169.90

#1481220

Home of Fast, Friendly, Courteous Service

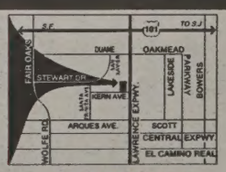
ELECTRONICS
FRY'S

Prices good thru March 10, 1992

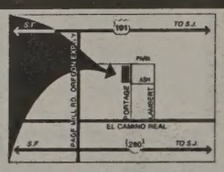
Limit Rights Reserved
Not Responsible For Typographical Errors

STORE HOURS
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

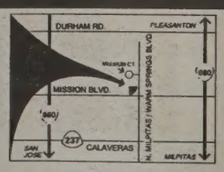
VISA AND MASTERCARD ACCEPTED
CORPORATE P.O. FAX # (408)735-6800



SUNNYVALE
1177 Kern Ave.
(408) 733-1770



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PCs Now Run Macintosh Software!

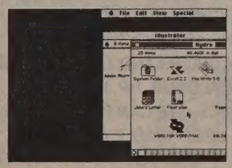
Introducing ANDOR EX

"The Andor works well, is fully Mac compatible and is well worth the price"
- Andy Seybold, Editor
Outlook on Prof. Computing

"Revolutionary Technology... It's great news for PC users and Mac Software vendors"
-Microtimes, January 1991

The ANDOR EX lets you and your PC become fully Macintosh integrated while taking advantage of your PC investment. Besides actually running Mac applications, ANDOR EX also allows you to transfer files between DOS and Mac residing on the same hard drive or to multitask in both environments.

View Mac Desktop



View both Mac and MS-DOS

View MS-DOS

CAUTION: PROFITS, POWER AND CONVENIENCE AHEAD!

The ANDOR EX is the world's first Macintosh compatible upgrade for PCs!

ANDOR EX is much more than a file transfer utility between DOS and Mac. The ANDOR EX allows your PC to actually run Mac applications, co-existing with all your PC applications. ANDOR EX runs at twice the speed of a Mac Classic, is compatible with System 7 and runs Pagemaker, Word 4.0, Excel 3.0, Hypercard and all other Mac compatible software.

The ANDOR EX includes an AppleTalk compatible port and lets you network to other Macs and use external Mac or PC peripherals.

The ANDOR EX turns your PC into a powerful **Dual Platform** computing machine with access to both DOS and Macintosh.

Call Hydra Systems today!

Phone: (408) 253-5800

Hydra Systems Inc.

Hydra Systems Inc.
1340 S. Saratoga-Sunnyvale Rd. #106
San Jose, CA 95129 USA
FAX: (408) 253-1113

Specifications subject to change without notice. Andor is a trademark of Hydra Systems Inc. Various trademarks belong to their respective manufacturers.

UNIX CLASSES AVAILABLE

Used By AT&T

To Demonstrate Their
UNIX Systems, Release 4
At UNIX Symposium
Dallas, New York & London

Used By Santa Cruz Operation-

SCO THE SANTA CRUZ OPERATION

The world's largest UNIX software developer-to exhibit their software at UNIXFORUM 1990, Washington, DC. THAT IS HOW GOOD OUR COMPUTERS ARE!

1st Fault Tolerant 486-50 MHz System Available in the World

SAM 486 WORKSTATION

- 486 (EISA)
- 256K CACHE
- 96 MB MEMORY
- NOVELL SOFTWARE
- UNIX
- AUTOCAD
- DIGITIZER
- 20"/31" MONITOR
- 1289X1024 TIGA HI-RESOLUTION CARD
- 600 MB DRIVE UP TO 5.0 GIGABYTES
- E SIZE PLOTTER
- 32 BIT NETWORK CARD
- 2.2 GIGABYTE TAPE BACK-UP TO 50 GIGABYTE
- FAULT TOLERANT SYSTEM

COMPLETE PACKAGE

WORLD'S FIRST FAULT TOLERANT 486 SYSTEMS!!

486-33 ISA/EISA PORTABLE

THE WORLDS BEST COMPUTER SAM 486-50 MHz WORKSTATION

1) INTEL, THE BIGGEST CPU MANUFACTURER IN THE WORLD, IS USING A **"SAM 486 WORKSTATION"** TO BENCHMARK ITS CPU'S
2) ATT UNIX LABS USES A **"SAM 486 WORKSTATION"** TO DEMONSTRATE ITS STATE OF THE ART UNIX SOFTWARE ON.
3) VERATAS, THE BIGGEST UNIX FAULT TOLERANT SOFTWARE COMPANY, DEVELOPED THEIR SOFTWARE ON OVER 50 OR SO **"SAM 486 WORKSTATIONS"** AND ARE DEMONSTRATING IT AROUND THE WORLD ON THE PORTABLE 486 AND **"SAM 486 WORKSTATION".**
4) SCITOR, THE #1 RATED PROJECT MANAGEMENT SOFTWARE IN THE WORLD, USES OVER 100 **"SAM WORKSTATIONS"** TO WRITE THEIR SOFTWARE ON.
5) ALL TOP STANFORD UNIVERSITY PROFESSORS WHO WANT THE BEST, FASTEST AND LATEST IN TECHNOLOGY USE THE **"SAM 486".**
6) COMPANIES LIKE ZACKSON WHO CONNECT OVER 100 TERMINALS TO (1) ONE **"SAM 486 WORKSTATION"** FOR THEIR TELEMARKETING ARE CONVERTING FROM MAIN OR MINI COMPUTERS TO A **"SAM 486 WORKSTATION"** AND ARE HAPPY TO DO SO. IT IS BETTER, EASIER AND LESS EXPENSIVE FOR THEM.
7) SILICON VALLEY ENGINEERS WHO ARE VERY GOOD AND VERY KNOWLEDGEABLE BOTH IN HARDWARE AND SOFTWARE ARE USING THE **"SAM WORKSTATION"** BY THE HUNDREDS FROM THE SAME ENGINEERING COMPANY....ADVANCED COMPUTER SYSTEMS!!
8) IF YOUR APPLICATION IS SOFTWARE DEVELOPMENT, ENGINEERING OR CAD WORK, OR YOU WANT A FILE SERVER WITH TWO HARD DRIVES WITH MIRRORING CAPABILITIES, UP TO 50 GIGABYTES. WITH NOVELL OR LANTASTIC OR 3 COMM OR ANY NETWORK. OR ANY UNIX LIKE SCO, OR INTERACTIVE, THE **"SAM WORKSTATION"** IS THE RIGHT CHOICE FOR YOU.
9) THE BEST PART IS OUR **"SAM WORKSTATIONS"** ARE UPGRADABLE SO YOU DO NOT HAVE TO BE STUCK WITH OLD, OUTDATED TECHNOLOGY. WE USE PRODUCTS THAT ARE UPGRADABLE, STATE OF THE ART AND THE BEST COMPONENTS THAT ARE AVAILABLE. WE SUPPLY DRIVES AND TAPE BACK-UP TO 50 GIGABYTES. PLOTTERS/DIGITIZERS FROM CALCOMP, HP, HOUSTON INSTRUMENTS, SUMMA SKETCH, KURTA & NUMONICS. WE CAN RECOMMEND THE BEST CONFIGURATION FOR YOUR 386 TO AN UPGRADABLE 486-50 MHZ EISA TO PARALLEL PROCESSING COMPUTERS.

BE ON THE WINNING TEAM.....BUY THE BEST

ADVANCE COMPUTER SYSTEMS

3 LOCATIONS TO SERVE YOU

SUNNYVALE
665 Grape Ave.
(408) 732-6200
Fax: (408) 749-9449

WALNUT CREEK
1987 N. Main St
(510) 945-8011
Fax: (510) 945-4941

SAN FRANCISCO
1231 Market St.
(Inside San Francisco Hotel Mezzanine Floor)
(415) 552-2902
Fax: (415) 522-2904

Leasing & Financing Available

TENS OF THOUSANDS OF OUR SYSTEMS SOLD SINCE 1983 ARE STILL IN USE!!

486-33DX NOTEBOOK $2999 BEST PRICE!

BEST PRICES ON

IBM · Apple Computer · COMPAQ · TOSHIBA · HEWLETT PACKARD

486 50 MHz

INCLUDES:

CASE
POWER SUPPLY
1.2 MB FLOPPY DRIVE
0K EXPANDABLE TO 32 MB

$1249

SCO
THE SANTA CRUZ OPERATION
Authorized Reseller SCO UNIX

UNIX TRAINING CLASSES IN SF

COURSE:	EXPLORING UNIX SYSTEM
DURATION:	10 DAYS
FEES:	$400
TIME:	MORNINGS 9AM TO 1PM
	EVENINGS 6PM TO 10PM
SYLLABUS:	HISTORY OF UNIX
	COMPARISON DOS, OS/2 & UNIX
	UNIX FILE SYSTEM
	UNIX SYSTEMS CONCEPTS
	UNIX TERMINAL MANAGEMENT
	UNIX PRINTER MANAGEMENT
	UNIX MAIL MANAGEMENT
	UNIX ACCOUNTING MANAGEMENT
	UNIX SCHEDULING (CRON)
	UNIX COMMANDS & UTILITIES
	BOURNE SHELL PROGRAMMING

NOTE: Class notes and refreshments will be provided

COMPUTERS

CALL FOR BEST AVAILABLE PRICES!!

AT&T	MYLEX
ALR	MICRONICS
ACER	MITAC
AMI	NEC
APPLE	PANASONIC
AST	PACKARD BELL
COMPAQ	SUN
EVEREX	SAM
EPSON	WORKSTATION
FORA	SAMSUNG
LEADING EDGE	TAXAN
MITSUBISHI	TOSHIBA
	ZENITH

COMPUTERS

BASIC SYSTEMS

286-12 MHz $255
286-16 MHz. 275
386-16 MHz. 475
386-20 MHz. 525
386-25 MHz. 745
386-33 MHz. 699
486-33 MHz. 899
486 EISA. . . . . .CALL
386-Upgradeable To 486 Computer .CALL

ENGINEERS SPECIAL

486-50 MHz EISA

- 200 MB HARD DRIVE
- 1.2 + 1.44 FLOPPY
- 1280x1024 VIDEO CARD
- 16 MB RAM + FAX/MODEM
- MONTIOR
- DIGITIZER
- PLOTTER
- AUTOCAD

FILESERVER

486-50 MHz

- 2.2 GIGA HARD
- DRIVE/MIRROR
- 96 MB RAM
- 2.2 GIGA TAPE
- BACK-UP TO
- 50 GIGABYTE
- SCO
- NOVELL

SPECIALS

HP III $1465
SONY 1304 . . . . . $597
200 MB DRIVE

MOTHER BOARDS

AMI
MYLEX
BEAVER
ORCHID

BEST PRICES

PLOTTERS/ DIGITIZERS

SUMMA SKETCH . . $325

HITACHI	MICROTEK
HP	LOGITECH
KURTA	ALL PLOTTERS
ROLAND	& DIGITIZERS

BEST PRICES!

UPGRADE

UPGRADE YOUR SYSTEMS
CHANGE THE MOTHERBOARD
IMPROVE PRODUCTIVITY
GET FASTER BOARDS, DRIVES, BETTER MONITORS OR NETWORK ALSO

LAPTOPS

IBM	APPLE
AST	NEC
COMPAQ	EVEREX
TOSHIBA	HP

PRINTERS

LASER

HP LASER III $1450

IBM	FUJITSU
APPLE	QUME
EPSON	PANASONIC
OKIDATA	NEC
QMS	

BEST PRICES

BUSINESS SPECIAL

486-33 MHz

- 200 MHz
- 1.2 & 1.44 MB FLOPPY
- 8 MB RAM + FAX/MODEM
- TAPE BACK-UP
- VGA CARD
- VGA MONITOR
- SCO UNIX
- NETWORKING

MONITORS

NEC	RADIUS
SONY	VIEWSONIC
HITACHI	SEIKO
NANAO	
CORNERSTONE	

NETWORKING

WE DESIGN AND INSTALL

NOVELL BANYAN
3 COMM SCO
LANTASTIC

WE WILL BUILD YOUR NETWORK WE WILL USE WHAT YOU HAVE & ADD WHAT IS NEEDED

GRAPHICS CARDS

HERCULES	NO. 9
ATI GRAPHICS	TRIDENT
SPEED STAR	PARADISE
TSENG LABS	ORCHID

ADVANCE COMPUTER SYSTEMS

Delivery & Installation Available

3 LOCATIONS TO SERVE YOU

SUNNYVALE - 665 GRAPE AVE. (408) 732-6200 • FAX: (408) 749-9449
WALNUT CREEK - 1987 N. MAIN ST. (510) 945-8011 • FAX: (510) 945-4941
SAN FRANCISCO - 1231 MARKET ST. (415) 552-2902 • FAX: (415) 552-2904

(A) Prices subjevct to change w/o notice
(B) Financing Available
(C) Not responsible for typo error
(D) Installation Extra
(E) Subject to stock on hand
(F) Prices vary at stores
(G) Toner extra
(H) Visa, mastercard

APR. 13, 1992 ISSUE #94
MICROTIMES™

TABLE OF CONTENTS

Micro Marketplace

Special Advertising Section For Bay Area Computer Buyers Starts On Page 76

A NOTE FROM THE EDITORS

It's been a while since we checked in with Sun Microsystems, and it seemed like the time had come for a return visit. We found our conversation with Ed Zander, president of the new SunSoft, an illuminating look at the company's strategy and its implications for the kind of computing we're all likely to be doing at work in the future—collaborative and connected. Story starts on page 64.

—ME

COVER STORY

Enterprise Computing
Workstations Get Down To Business At SunSoft *By Mary Eisenhart* 64

Cover and contents photos: Michael Jay

After years of prosperity, technical excellence, and considerable promotion of its SPARC standard, Sun Microsystems made waves last fall when it announced its intention to port the Solaris operating system from SPARC to Intel environments. Much confusion ensued, with questions on subjects ranging from Sun's perceived abandonment of SPARC (not happening) to the possible replacement of the DOS standard by Solaris-flavored UNIX (also probably not happening). In a recent visit to Mountain View, we found SunSoft president Ed Zander willing and able to clarify the situation. Read on.

NEWS & VIEWS

Industry Insight *By Paul Hoffman* 16

Realizable Fantasies *By Jim Warren* 26

The Online Campaign *By Glenn Tenney* 35
Silicon Valley entrepreneur Tenney explains why he's running for Congress.

Dvorak's Last Column *By John C. Dvorak* 266

BUSINESS SOLUTIONS

The Ultimate Portable Note Taker *By Ed Kahn* 36
For the mobile computer user, InfoSelect helps keep information in order.

Small Businesses Connect With Peer-To-Peer Networks *By Marv Downey* 43
You don't have to be a Fortune 500 company to benefit from networks.

Bridging The Email Abyss *By Peter John Harrison* 50
Global communications with MCI.

LANs *By Wayne A. Yacco* 54

UNIX *By Bennett Falk* 60

FEATURES

What We Learned From Michelangelo *By Paul Hoffman* 96

Microsoft's BASIC Strategy *By Birrell Walsh* 111
With QBASIC, QuickBASIC, and Visual Basic, Microsoft has an ideal set of products for the beginning or occasional programmer.

Mood Indigo *By Gail Kesner* 120
The affordable workstation from Silicon Graphics is a powerful and user-friendly multimedia machine.

Making Sense Of CD-ROM *By Matthew Leeds* 132

PowerBook Repair: Tales Of The Bleeding Edge *By Mary Eisenhart* 159
One 800 number. Two TORX tools. Warranty-voiding fu.

PRODUCT SPOTLIGHT

Product Updates 160

New Products

Storage 160
486 PC Hardware 160,162
386 PC Hardware 162
PC Software 162
Macintosh Software 166,168
Books 168,172
Communication Hardware 172,174
Communication Software 174,176
LAN Hardware 176
Accessories 176

Reviews

Games *By Mike Markowitz* 182
Macintosh Software 184
Printers 184
PC Hardware 186
PC Software 186
Network Hardware 186
Books 188

CREATIVE TOOLS

Kodak's Photo CD *By Tony Reveaux* 194
Coming soon to your local photo lab, this product will leverage computer use in the home and the professional shop.

The World Of Photoshop *By Matthew Leeds* 198
Even more cool stuff from Adobe—new filters and upcoming QuickTime support.

BMUG *By David Morgenstern* 202

Amiga *By Matthew Leeds* 215

RESOURCES

Calendar of Events 218

User Group Network 230
This month, BBS correspondent Kathleen Creighton spotlights boards with a religious or spiritual orientation.

Classifieds 257

Index of Advertisers 264

Correction: In last month's table of contents, we incorrectly listed the name and location of SunWorld Expo, which is taking place at the Santa Clara Convention Center April 7–9. The show preview in the same issue contained the correct information. We apologize for the error and subsequent confusion.

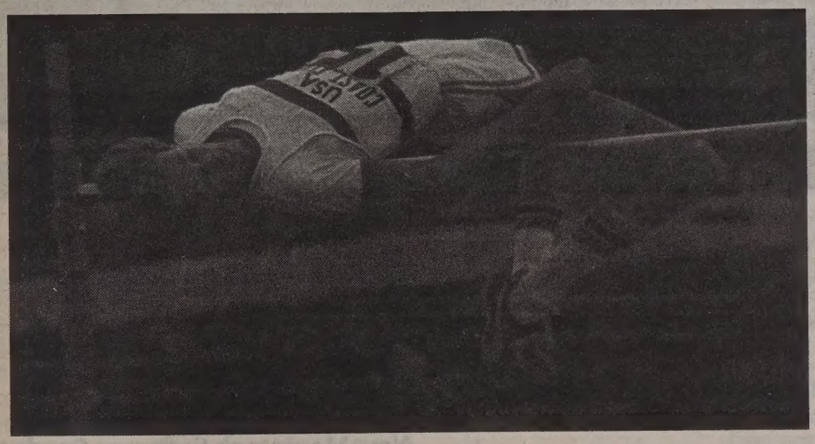
—eds.

Your First Computer

By Mike Markowitz 115
Networks explained in plain English.

We Challenge the limits !

Contracts, Projects Welcome !



Complete System Includes:

- ●1Mb Memory
- ●1.44Mb Floppy Drive
- ●1:1 FD/HD Controller w/2serial,Parallel,Game
- ●S-VGA Card with S-VGA Monitor
- ●101 Keyboard

We do custom configuration !

	40Mb HD	170Mb HD
486-33Mhz	**$1325**	**$1565**
386-33Mhz	**$1015**	**$1215**

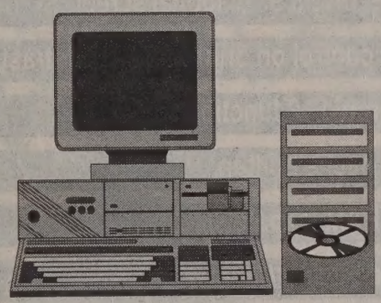
Proven Satisfaction

Our customers include *the U.S. Government, University of N.Carolina, Weitek, Ohio State University, General Motors, Chevron, University of Florida, Goldstar,University of Tennesse, Siemens Etc...*

NETWORKING

- ●Arcnet 8 bit Star.....$49
- ●Ethernet 8 bit.....$95
- ●Ethernet 10Base T 8 bit..$140
- ●Ethernet 16 bit.....$125
- ●Ethernet 10Base T 16 bit..$165
- ●Lantastic AI.....$79
- ●Lantastic Starter Kit $312
- ●Lantastic for Windows...$189

Call for other Lantastic and Novell products !



CD-Server Sub-System for NOVELL or Lantastic

MULTIMEDIA

Multimedia solution for your PRESENTATION !

Call for details !

- **●Sony CDU-535**
  with controller **$349**
- **●Sony Laser Library.....$550**
- **●AITech Vimager Procolor/P-Plus**
  -65,536 colors,real-time capture board
  -640X480 resolution,color preview.....**$525**
- **●AITech Vimager Pro VGA/TV /$875**
  -VGA to NTSC converter w/genlock
  -S-VHS, NTSC input/output **$495**
- **●Live Motion Video Window Capture brd.**
  -Real-time,24 bit color color framegrabber
  -Running under MS-Windows ! ...$715
- **●Media Vision's Sound Board $259**

CALL:

(408)524-9091

Terms and Conditions:
All prices reflect cash discount.One Year Warranty on Parts and Labor. 30 Day Satisfaction Guaranteed on all products.All returns are subject to approval. 15% restocking fee for all returns.All prices subject to change without notice.Not responsible for typos.

Since 1986

American Multisystems

538 Oakmead Pkwy. Sunnyvale California 94086

PRODUCT-ORIENTED TABLE OF CONTENTS

As a service to our readers, we offer this alternative table of contents, with the information organized by product and machine type.

MS-DOS

What We Learned From Michelangelo 96
By Paul Hoffman

Microsoft's BASIC Strategy 111
By Birrell Walsh

New 486 PC Hardware Products
- *Poly 486/50L* 160
- *V88 LBV433* 162

New 386 PC Hardware Products
- *Wyse Decision 386/40* 162
- *HP Vectra 386S/20 PC* 162
- *ALR Powerflex Flyer 386SX/25* 162
- *Amkly 386SX Trimline Family* 162

New PC Software Products
- *Norick Paperless Office* 162
- *Aldus PageMaker Database Edition* 162

PC Software Review
- *It's Legal* 186

LAPTOPS

The Ultimate Portable Note Taker .36
By Ed Kahn

LANS

Small Businesses Connect With Peer-To-Peer Networks 43
By Marv Downey

Bridging The Email Abyss 50
By Peter John Harrison

LAN Column 54
By Wayne A. Yacco

Your First Computer 115
By Mike Markowitz

Network Hardware Product Review
- *Token Express* 186

UNIX

UNIX 60
By Bennett Falk

Enterprise Computing: Workstations Get Down To Business At SunSoft ..64
By Mary Eisenhart

Mood Indigo 120
By Gail Kesner

MACINTOSH

PowerBook Repair: Tales Of The Bleeding Edge 159
By Mary Eisenhart

The World Of Photoshop 198
By Matthew Leeds

BMUG 202
By David Morgenstern

New Macintosh Software Products
- *In Control* 166
- *SoftSell* 166
- *MacTools 2.0* 166
- *HandiWorks* 168

Macintosh Software Review
- *Power Windows/Tiles* 184

AMIGA

Amiga Column 215
By Matthew Leeds

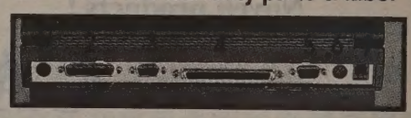
QUALITY, SERVICE, SAVINGS... DIRECTLY FROM MANUFACTURER

$2,595.00 only

- VGA 640 x 480 supertwist up to 64 shades
- Large, bright 9" diagonal screen
- Easy control on brightness & contrast
- Seperated 12 function keys
- 128K cache built-in
- 4MB RAM (exp. to 8MB)
- NiCad battery (up to 3 hrs.)
- Full function standard 82 key keyboard
- L-shape cursor control keys
- 80MB HDD 19ms (40, 60, 130 opt.)
- Weight 6lb. (w/ battery 7lb.)
- 3 way power saving (sleep mode)
- 1.44MB 3 1/2" floppy drive

FREE Bonus Pack ($899.00 Retail)

- Internal Fax/Modem 9600/2400 Baud (S/R) w/ software
- Internal Scanner Adaptor Card
- MS-DOS 5.0
- Deluxe leather carrying case
- Time contact management software & more
- 30 Days money back Guarantee
- 1 Year full warranty parts & labor



1. 101 Enhanced keyboard/keypad port
2. Parallel (external floppy drive)
3. External VGA port built-in
4. 100Pin Expansion chasis interface
5. Serial Port
6. Hand Scanner Interface
7. Internal Fax/Modem 9600/2400 Baud (S/R)

CALL:
800-882-6735

C.O.D. VISA MasterCard AMERICAN EXPRESS

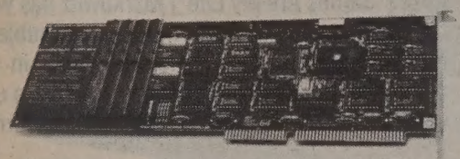
AMERICAN RELIANCE INC.
5601 N. Rosemead Blvd, Temple City, CA91780
FAX: (818) 575-0801
Monday thru Friday 8:00 a.m. to 5:30 p.m.

DISCOUNT DRIVES

Quality . Rock Bottom Prices . Expert Service

New IDE Caching Controller

WINDOWS USERS REJOICE! THERE'S FINALLY AN INEXPENSIVE WAY TO GET MORE PERFORMANCE FROM YOUR EXISTING IDE DRIVE. CSC'S IDE FASTCACHE 64 IS YOUR ANSWER. FORGET MEMORY RESIDENT CACHE PROGRAMS THAT STEAL VALUABLE CPU TIME FROM APPLICATIONS. FREE SYSTEM MEMORY AND BREAK THE DISK BOTTLENECK WITH HARDWARE DISK CACHE. THIS CARD SUPPORTS TWO IDE DRIVES AND UP TO 4 FLOPPIES. NO DRIVERS ARE REQUIRED FOR ANY MS DOS 5.0 APPLICATIONS. CACHE EXPANDS TO 64MB. FIVE YEAR WARRANTY.

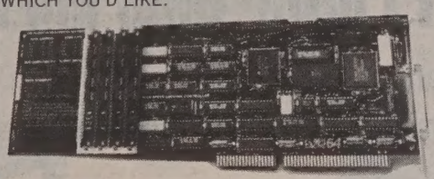


WHOLESALE PRICING
IDE FASTCACHE
(1MB).....**$195!**

CALL FOR QUANTITY DISCOUNTS

"Fastest SCSI controller known to man"

THIS IS AN ACTUAL QUOTE FROM A FLASHCACHE CUSTOMER. YOU TOO WILL BE AMAZED WITH THE EXPANDABILITY AND PERFORMANCE BOOST THIS CONTROLLER PROVIDES. UP TO 7 SCSI AND 4 FLOPPY DRIVES CAN BE CONNECTED TO A SINGLE CARD. NEW SCSI PERIPHERALS LIKE CD-ROM'S AND FAST SCSI TAPE DRIVES CAN BE ADDED WITHOUT ADDITIONAL CONTROLLERS. UP TO 64MB OF CACHE RAM IS SUPPORTED. THIS IS ALSO THE FIRST SCSI CARD TO SUPPORT THE NEW IBM STANDARD 2.88MB HIGH PERFORMANCE FLOPPY DRIVES. FOR A LIMITED TIME, EACH CARD PURCHASED AT $395 WILL INCLUDE A FREE 2.88MB FLOPPY DRIVE OR A 4MB CACHE UPGRADE. JUST TELL US WHICH YOU'D LIKE.



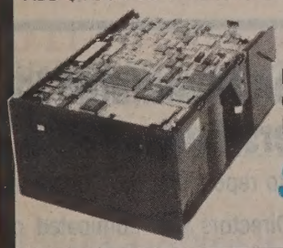
WHOLESALE PRICING
SCSI FLASHCACHE
(1MB).....**$395!**

FREE 2.88MB FLOPPY DRIVE
OR 4M CACHE RAM

CALL FOR QUANTITY DISCOUNTS

640 Meg Monster Drive

OUR CUSTOMERS NICKNAMED THIS DRIVE "THE TANK" BECAUSE OF ITS REPUTATION FOR LONG TERM RELIABILITY. A SPECIAL PURCHASE LETS US SELL THESE DRIVES BELOW NORMAL COST. EACH DRIVE IS FACTORY REFURBISHED AND BACKED BY CSC'S FAST TURNAROUND 1 YEAR WARRANTY. ESDI AND SCSI MODELS AVAILABLE. ADD $100 FOR 5 YEAR WARRANTY.

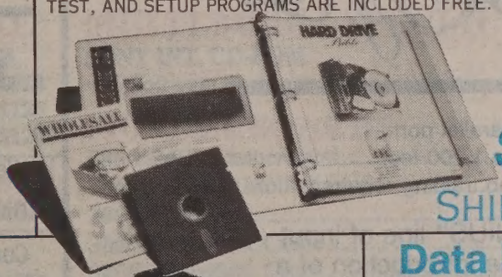


MAXTOR 8760E
640MB 14.5MS
ESDI PRICE

$1149

The Good Book on Drives

FINALLY, AN EASY TO READ COMPLETE REFERENCE BOOK ON HARD DRIVES. THE GUYS WHO WROTE THE BOOK ON HARD DRIVES NOW BRING YOU YEARS OF EXPERIENCE AND TECHNICAL INFORMATION IN OUR NEW "HARD DRIVE BIBLE". INCLUDED ARE INSTALLATION INSTRUCTIONS, JUMPER SETTINGS, DRIVE PARAMETER TABLES, AND SETUP INFORMATION ON HUNDREDS OF HARD, OPTICAL, AND TAPE DRIVES. ALSO INCLUDED ARE JUMPER SETTINGS AND COMPATIBILITY INFORMATION ON CONTROLLER CARDS AND DRIVER SOFTWARE. THIS BOOK IS ESSENTIAL FOR ALL DEALERS AND SYSTEM INTEGRATORS WHO INSTALL HARD DRIVES. INCLUDES TIPS ON INCREASING SYSTEM PERFORMANCE THROUGH SOFTWARE. FORMATTING, PERFORMANCE TEST, AND SETUP PROGRAMS ARE INCLUDED FREE.



$24.95

SHIPPED FREE

320 Meg Kit $595!

CSC MADE A LARGE PURCHASE OF FACTORY REFURBISHED DRIVES TO SATISFY THE INCREASING DEMAND FOR HIGH CAPACITY AT A LOW COST. THESE ESDI DRIVES OFFER IMPROVED PERFORMANCE OVER IDE, AND DON'T REQUIRE SOFTWARE DRIVERS FOR NEW OPERATING SYSTEMS. WESTERN DIGITAL ESDI CONTROLLER AND CABLES INCLUDED FREE.

COMPLETE KIT
SPECIAL

$595

CD-ROM's are hot!

IT'S NO SECRET THAT THE FUTURE OF SOFTWARE DISTRIBUTION IS CD-ROM. WITH THE INCREASING POPULARITY OF SCSI, OUR CUSTOMERS HAVE PUSHED US TO ADD A FAST, TOP QUALITY SCSI CD-ROM DRIVE TO OUR PRODUCT LINE. THESE BRAND NEW CHINON DRIVES ARE, IN OUR OPINION, THE BEST CD-ROM PLAYER ON THE MARKET. WE'RE KEEPING PRICES LOW BY INCLUDING EVERYTHING YOU *NEED* FOR INSTALLATION, AND NOT FORCING YOU TO BUY A PILE OF CD'S YOU DON'T WANT. ACCESSORIES AND DEMO CD INCLUDED FREE.

$395

Data Recovery and Drive Service

WHETHER YOU BOUGHT YOUR LAST DRIVE FROM CSC OR NOT, OUR SERVICE CENTER IS HERE TO HELP. WE SPECIALIZE IN LARGE CAPACITY DRIVE REPAIR AND DATA RECOVERY. OUR EXPERT TECHNICIANS, CLEAN ROOM AND FACTORY LASER SERVO WRITERS ARE HERE TO SUPPORT YOU AFTER THE SALE. YOU CAN DEPEND ON CSC.

Top Cash Paid for all types of Drives

Thousands of Drives in stock

Call for Quantity Discounts

Closeout Specials

WHEN CSC CLEANS HOUSE, OUR CUSTOMERS WIN. PRICES VALID ONLY WHILE SUPPLIES LAST, SO CALL SOON TO AVOID DISAPPOINTMENT! 90 DAY WARRANTY ON REFURBS, 1 YEAR ON NEW CLOSEOUTS, EXTENDED WARRANTY AVAILABLE.

MODEL	PRICE
HITACHI DK515C-78 (640MB 18MS SCSI) NEW	$1095
MAXTOR EXT-4380E (320MB 28MS ESDI) REFURB	$ 529
MAXTOR XT-4380E (320MB 18MS ESDI) REFURB	$ 749
MAXTOR RXT-800S (800MB SCSI WORM) REFURB	$ 795
MAXTOR PANTHER (1.7GB 13MS ESDI) REFURB	$1995
MAXTOR TAHITI (1000MB SCSI ERASABLE OPTICAL) NEW	$1895
SEAGATE ST41600N (1.3GB 12MS SCSI) NEW	$2895

CORPORATE SYSTEMS CENTER
730 North Pastoria Ave. Sunnyvale, CA 94086
(408) 737-7312
FAX (408) 737-1017

CONTRIBUTORS

Kathleen Creighton is a longtime observer of public online services. She can be reached at casey@well.sf.ca.us.

Marv Downey is the owner of Market Value Systems, a Berkeley-based value added reseller specializing in real estate applications.

John C. Dvorak is a columnist, book author, software publisher, and radio talk show host. He gets a lot of weird mail.

Peter John Harrison is a data communications and connectivity specialist based in San Francisco.

Paul Hoffman is an industry analyst who's been writing about microcomputer technology for ten years, and the author of several books on computer-related topics.

Ed Kahn lives in Studio City and writes about laptops and other PC technology.

Gail Kesner is a technical writer, currently working for cc:Mail.

Matthew Leeds works at Brøderbund Software, and is also a writer and photographer. He writes about Amiga- and Macintosh-related products and issues.

Woody Liswood has been writing about microcomputer hardware and software since 1980 for such publications as *Whole Earth Software Review, Personal Computing, PC World,* and *Compute!* He has also published a book on micro-based Human Resource Information Systems.

Mike ("Games Are My Life") Markowitz has written about games and other interesting subjects for us since our first issue. He works in the computer lab of a major Southern California university and has recently discovered the Internet.

Tony Reveaux is a San Francisco-based consultant, the editor of *Computer Publicity News.* He's also a contributing editor for *Artweek,* and writes the "MediaScan" column in *Film/Tape World.*

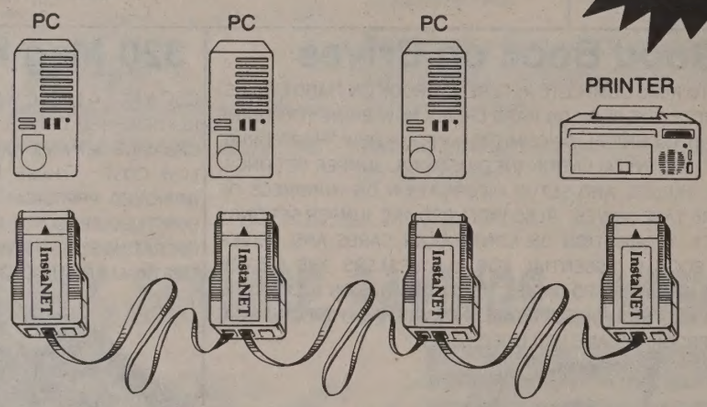
Birrell Walsh is a free-lance writer, technician, linguist, and radio commentator in San Francisco.

Wayne A. Yacco is a consultant and writes for many computer publications on a variety of subjects. He lives in Burbank.

All Your Printer Sharing Needs ...

Low-cost, Incremental, Instant Printer Network

$59/PC



- Connect up to 16 PCs, through parallel port.
- Connect through phone wire up to 1,200 feet.
- Plug and print, no software and no training required.

GeniLAN, the creator of "GENIUS" line of input devices, just got better with the introduction of a series of printer-sharing and LAN devices.

You have the solid assurance from us of the quality, service and support even before you start doing business with us. This is our guaranty!*

*Extended warranty available.

Free MAXLAN Networking software kit with purchase of three or more Ethernet cards.

MAXE1000C $130
MAXE2000C $140
MAXE1000T $140
MAXE2000T $150

Call for Arcnet, Token Ring, Hubs, etc.

JetSet for HP LaserJet II, IID, III, IIID, IIISi and DesignJet - New HP plotter. Plug into the "I/O" of your HP LaserJet, and up to 15 people can use it at the same time -- without delay!

JS600 ..... $495
JSI700 ..... $795

Call for other models!

MAXELAN INC.

1-800-234-1688

Tel. (408) 739-2581 • Fax (408) 739-2355
11083 Wilkinson Avenue
Cupertino, California 95014

Jim Warren Nominated for Consumers Union Board

We are delighted to report that the Consumers Union Board of Directors has nominated our Contributing Editor and "futures" columnist, Jim Warren, as one of thirteen candidates, nationally, for their board. Six of the thirteen will be elected by ballots, which are being mailed to all *Consumer Reports* subscribers in April.

We applaud their nomination and wish Jim well in the election. Consumers and the Consumers Union would benefit from having him on their board, especially regarding issues of online consumer services, consumer privacy issues, and the whole realm of low-cost consumer computing.

If you subscribe to *Consumer Reports,* watch for your ballot sometime this month.

–eds.

EVEREX
PostScript
LASER PRINTER
(new)
$1090

DO IT YOURSELF - AND SAVE!

Install and Configure or Repair Your Own Computer – With Us!

SPECIAL
GVC
386/40/64K
$250
Quantity Limited

IT'S EASY—In a test done by Channel 7 News anchor David Lui, a 386/33 computer was built by Mr. Lui in our center in 1 hour 45 minutes. Visit one of our 25 convenient California locations and see what everybody is talking about.

SPECIAL PROMOTION: Free Mouse Pad for Everyone Visiting Our Store

DO IT YOURSELF SPECIAL

Build a 386/40 SVGA Monitor System with 1MB,
2 Floppy Drives, 40MB Hard Disk $1028
4MB upgrade $120
100MB HD upgrade $120

COOLER AND ON BOARD

MISCELLANEOUS

Everex Notebook 386SX-20/1MB/60MB,
DOS, Windows, Mouse, etc. $1770
Brother Portable Printer
for Notebook (HJ-100i) $298

MULTI-MEDIA SPECIAL

SONY INT. CD-ROM
w/6 Software Packages $450

MOTHERBOARDS

286 12MHz Motherboard ..... CALL
386SX 16MHz Motherboard $130
386SX 25MHz $155
386/33MHz/64K Cache $255
386/40MHz/64K Cache $270
486/33MHz/64K Cache $630
486/50MHz/256K Cache $999

ACCESSORIES

1.2MB or 1.44MB Floppy Drive $59
Mini Vertical Case with P/S $65
Pixel Turbo VGA Card (1280x1024) $175
Mono Monitor $75
Everex VGA Card (800x600) $65
16 Bit Super VGA Card (512K) $55
Windows accelerator card $250
Super VGA Monitor (1024x768) $249
Non-interlaced VGA Monitor $375
40MB Hard Disk ..... CALL
Other Hard Disks ..... CALL
Everex 120/240MB Floppy Tape Drive $215/280
9600 Fax/Data Modem (Free Prodigy Kit) $85
BitFax for Windows (Fax modem software) .. $59
BitCom for Windows (Modem software) $59
Brother 9-pin Printer $140
Everex Tempo LX 60MB Notebook $1771
Media Music Card $68
Many, Many More ..... CALL

Prices subject to change without notice.
Not responsible for typographical errors.
386, 486, SX are trademarks of Intel Corp.

100% FINANCING AVAILABLE

MILPITAS
976 Hanson Court
Milpitas, CA 95035
(408) 946-6991
Milpitas Blvd. & Jacklin
OPEN SUNDAY

CONCORD
1130D Burnett Ave.
Concord, CA 94520
(510) 682-8934
Cnr of John Glenn & Burnett
OPEN SUNDAY

SAN FRANCISCO
195 Commonwealth Ave.
San Francisco, CA 94118
(415) 668-9311
Geary & Commonwealth
OPEN SUNDAY

MILLBRAE
231 Millbrae Ave., Ste. 113
Millbrae, CA 94030
(415) 692-6326
Right next to Shell Station
OPEN SUNDAY

CAMPBELL
486 E. Campbell Ave.Ste 102
Campbell, CA 95008
(408) 374-7477
3 blocks W. of Pruneyard

SACRAMENTO
3019 Arden Way
Sacramento, CA 95825
(916) 972-0311
Inside Arden Center

BLOSSOM HILL
461 Blossom Hill Rd., Unit H-1
San Jose, CA 95123
(408) 363-1800
Blossom Hill at Snell
OPEN SUNDAY

LOS ALTOS
111 Plaza North
Los Altos, CA 94022
(415) 941-7778
Bk of State Nr. Wells Fargo

SUNNYVALE
1214 Apollo Way, Ste. 404-2
Sunnyvale, CA 94086
(408) 749-8114
Lawrence nr. Wells Fargo

HAYWARD
28301 Industrial Blvd., Ste. A
Hayward, CA 94545
(510) 732-0377
Industrial nr Hesperian

VALLEJO
480 Redwood St., Ste. 41
Vallejo, CA 94590
(707) 644-5055
Redwood exit west on Hwy 80

DALY CITY
7317 Mission Street
Daly City, CA 94015
(415) 994-7581
Near John Daly Blvd.

REDWOOD CITY
1111 Oddstad Drive
Redwood City, CA 94063
(415) 367-9322
Cnr. of Veteran & Maple

BERKELEY
1552 Beach St., Ste. B
Emeryville, CA 94608
(510) 653-6286
Cnr of Park & Halleck

SAN RAFAEL
757 Lincoln Ave., #30
San Rafael, CA 94901
(415) 453-8525
C. San. Rafael exit at Hwy 101

SAN RAMON
coming
SOON!
Call (510) 682-8934

Domino

COMPUTER SELF SERVICE CENTERS

QUALITY.....PERFORMANCE.....SERVICE.....SATISFACTION

SANTRON

"Top 5 National HomeBrewer"

-PC Computing, March 1991

486-50/33MHz w/ Cache

- 6-Bay Full Tower with Speed Display
- AMI BIOS with Built-in Setup Utilities
- 256K of 25ns External Cache Memory
- 4MB of 70ns RAM exp. to 32MB
- 210MB 15ms HD w/ 64K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- 16Bit SVGA Card w/ 1MB of RAM
- 14" Super VGA Color Monitor (0.28mm, 1024x768) Non-Interlaced
- 101 Enhanced-Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- WEITEK Math-CoProcessor Socket
- 8K On-Chip Burst Mode Utilization
- Free 3-Button Hi-Resolution Mouse
- Free Microsoft DOS 5.0 & Windows 3.0

$2595/2145

486-25DX/20SX w/ Cache

- 6-Bay Mid. Tower with Speed Display
- AMI BIOS with Built-in Setup Utilities
- 64K of 25ns External Cache Memory
- 4MB of 70ns RAM exp. to 32MB
- 120MB 18ms HD w/ 32K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- 16Bit SVGA Card w/ 1MB of RAM
- 14" Super VGA Color Monitor (0.28mm, 1024x768) Non-Interlaced
- 101 Enhanced Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- WEITEK Math-CoProcessor Socket
- 8K On-Chip Burst Mode Utilization
- Free 3-Button Hi-Resolution Mouse
- Free Microsoft DOS 5.0 & Windows 3.0

$1745/1645

386-40/33/25MHz w/ Cache

- 6-Bay Mid. Tower Case with Speed Display
- 64K of 25ns External Cache (40/33MHz Only)
- 4MB of 70ns RAM exp. to 32MB
- 120MB 18ms HD w/ 32K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- 16Bit SVGA Card w/ 1MB of RAM
- 14" Super VGA Color Monitor (0.28mm, 1024x768)
- 101 Enhanced Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- Math-CoProcessor Socket
- Free 3-Button Hi-Resolution Mouse
- Free Microsoft DOS 5.0 & Windows 3.0

- Non-Interlaced Monitor Upgrade ..... $ 50

$1525/1495/1445

INSTEAD *of sinking in your hard earned dollars for an expensive brand name, you should consider the VALUE that you really get. As a leading "Home brewer" ,Santron has more than one hundred professionals who can help customers to get the BEST VALUE: Price, Quality, Support & Service. That's where Santron has the high-tech edge!!!*

WE *only talk about QUALITY PRODUCTS. Santron's customers know this very well as our computers work hardest and last longest. WE ARE THE BEST -- when image and reputation are at stake! So call us toll-free and be part of the growing number of satisfied customers worldwide who found that Santron is a business that cares about her customers.*

OUR *satisfied customers include: NASA, Lawrence Laboratories , Stanford University, California State University, Miles Laboratory, and many more.....*

SPECIAL

Take one big step on the newest technology and enjoy the greatest convenience of your PC.....

Now you can carry your data around which were stored in your hard disk drive without backing them up onto tons of floppy diskettes.

You can save big $ by sharing your hard disk drive with other PCs.

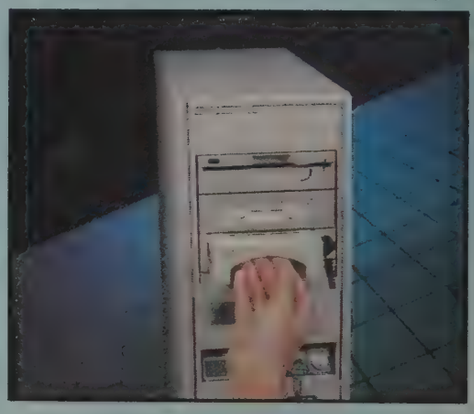
Or, you can lock the drive in your case so that nobody can remove or use it.

FREE...

Removable Hard Disk Drive Mounting Kit with Security Lock

Retail Value.....$45.00

(With System Purchase and Total Price Over $1,500 Only.)



(Free Substitutes: Power Control Center / Surge Protector with 5 devices control and master power switches)

SAN MATEO HEADQUARTER
1185 Chess Dr., Ste. I, Foster City, CA94404
Hours: Mon-Sat 9:00-6:00p.m.
Tel: (415) 571-1619 Fax: (415) 571-6079

1-800-748-6355

SAN FRANCISCO OFFICE
1510 Noriega St., San Francisco CA 94122
Hours: Mon-Sat 9:00a.m. - 6:00p.m.
Tel: (415) 753-3559 Fax: (415) 681-2535

1-800-748-6269

SANTA CLARA/SAN JOSE OFFICE
1900 Wyatt Dr., Ste# 4, Santa Clara
Tel:(408) 970-0351 Fax: (408) 970-0359

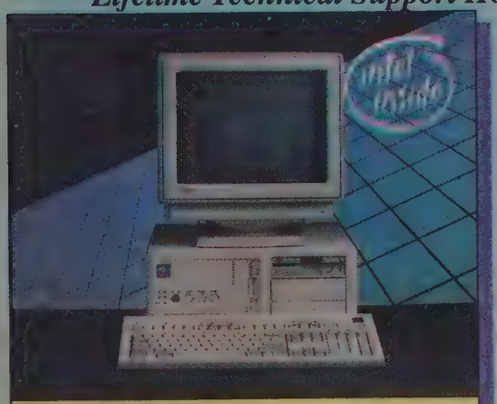
1-800-649-3325

WALNUT CREEK/CONCORD OFFICE
(Bowman & Associates, NOVELL Specialist)
1647 Willow Pass Road, Ste 341, Concord

510-671-9971 Fax:510-798-9986

Lifetime Technical Support Hotline: 415-571-5193
(MONDAY THROUGH FRIDAY, 10:00AM to 5:00PM PACIFIC TIME)

QUALITY....PERFORMANCE....SERVICE....SATISFACTION



386SX-25/16MHz

- 5-Bay Baby Desktop Enhanced Case
- 2MB of 70ns RAM exp. to 16MB
- 42MB 25ms HD with 8K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- 16Bit Standard VGA Card
- 14" VGA Color Monitor
- 101 Enhanced Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- Zero Wait State Operation
- Math-CoProcessor Socket
- Free 3-Botton Hi-Resolution Mouse
- Free Microsoft DOS 5.0 & Windows 3.0

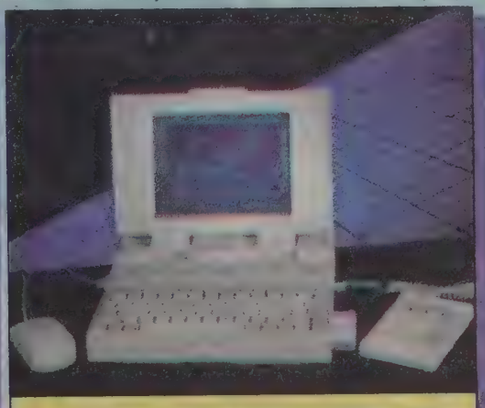
· SVGA Monitor/Card Upgrade ..... $ 99

$975/925

PLASMA/LCD PORTABLE

- PC III Gas Plasma/LCD Portable Case
- 4MB of 70ns RAM
- 120MB HD 18ms with 32K Cache
- TEAC 1.2 and 1.44 MB Floppy Drives
- 640x480 Pixel Graphic Display
- 1024x768 on External VGA Display
- High Contrast Ratio 12:1 (150:1 Optional)
- 110/220V Auto-Switch Power Supply
- Heavy Duty Carrying Bag Included
- Free 3-Button Hi-Resolution Mouse
- Free Microsoft DOS 5.0 & Windows 3.0

386-25SX $1945
386-33 64K ...$2175
486-33 256K .$2545



NEW RELEASE
386DX-33MHz/32K CACHE NOTEBOOK

- Weight: 6 lbs; Dimension 11" x 8.5" x 2"
- 4MB Upgradable to 16MB
- 120MB 17ms Hard Drive
- 82 Key with 12 Function Keyboard
- Arrow Key Style: Reverse "T"
- 1.44MB Int. Floppy Drive
- 1.2MB Ext. Floppy Drive Optional
- 640x480 LCD with Gray Scales
- 1 Serial and 1 Parallel Ports
- AT Bus for Docking Station
- 800x600 Ext. Monitor Port
- Numeric Key Pad
- Rechargeable Battery Pack
- 100/240 AC/DC Adaptor
- Luxury Carrying Case
- User Manual & Documentation

$2445

OPTIONAL ACCESSORIES

Battery Charger	$30
Battery Pack	$85
Automobile DC Adaptor	$50
External Fax/Modem Pocket	$175
External Ethernet Adaptor	$195
Docking Station	$195

SANTRON'S FLICKER-FREE SOLUTION

IMAGE Super VGA monitors using HITACHI'S newest non-glare tubes offering flicker-free high-resolution images for today's demanding software applications like Microsoft Windows 3.0. All of Santron's DX systems are bundled with IMAGE and Trident SVGA card. With ORCHID Sierra HiColor RAMDAC upgrade path, users enjoy up to 72Hz refresh rate and 32,768 colors for their enhanced resolution graphics.

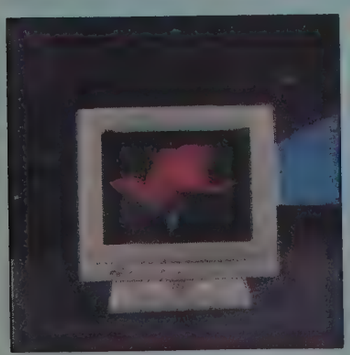


IMAGE-1401 & TRIDENT /1MB Bundle $345
IMAGE-1402 & TRIDENT /1MB Bundle $405
Upgrade from TRIDENT to ORCHID II/IIs $75/115

IMAGE-1401

Size: 14" Dot Pitch: 0.28mm
Display Colors: Unlimited
Max Resolution:
1024x768i
Refresh Rate:
60Hz(800x600ni)
87Hz(1024x768i)

IMAGE-1402

Size: 14" Dot Pitch: 0.28mm
Display Colors: Unlimited
Max Resolution:
1024x768ni
Refresh Rate:
70Hz(800x600ni)
60Hz(1024x768ni)

30 Day Money Back Guarantee

Warranty Policy

1 Year Parts
2 Years Mainboard
3 Years In-house Labor
(On-Site Service Available)

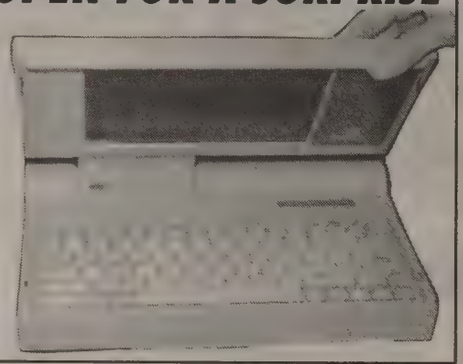
ORDERING INFORMATION:
MasterCard and Visa Accepted. No surcharge on credit card orders. Leasing available to qualified customers. Shipping and handling are additional. Corporations rated 3A2 or better and governments accounts are accepted on a net 30 basis. C.O.D. orders add $10 special handling charge. Call for special UPS Red/Blue terms. AK and HI add 5% to total order to cover PAL and insurance. No sales tax outside of CA. Products labeled FREE on advertising are not covered by warranty. All returns must have RMA# issued by our Customer Service Department (415) 571-5193 . All returns must be in original packaging and include original invoice, warranty cards, and documentation. Incomplete product returns, unauthorized returns and refused shipments are non-refundable or subject to a 20% restocking charge. Refunds will be granted less deductions on freight, insurance, and corresponding charges related to the payment. All prices and specifications are subject to change without notice. Santon is not responsible for typography or photography errors.

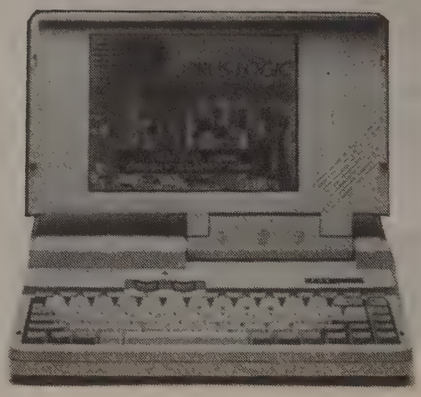
Q. WHY SERIOUS NOTEBOOK BUYERS BUY BONA NOTEBOOK COMPUTERS?

A. PRICE, PERFORMANCE, RELIABILITY & SERVICE

OPEN FOR A SURPRISE

! NEW !





$1599 4 MB RAM 60 MB HDD

$1699 4 MB RAM 80 MB HDD

$1899 4 MB RAM 80 MB HDD

386SX-20MHz

ADVANTAGES:

* INTEL 80386SX-20 MHz CPU
* 4 MB RAM Expandable to 8 MB RAM
* 80 MB High Speed Hard Disk Drive
* 1.44 MB 3.5" Floppy Drive
* MS DOS 5.0 & MS DOS 3.0
* Leather Carrying Case
* Battery Pack, AC/DC Adapter

SPECIFICATIONS:

* Dimensions-11.7"x8.5"x2.0"
* 6.5 lbs (with battery pack)
* Backlit VGA 8.5" Screen
* Battery Life-2.5 Hours
* Universal AC Adapter
* 1 Serial Port (2nd Com Port Option)
* External VGA Monitor Port
* Automobile Power Adapter Available

386SL-20MHz

ADVANTAGES:

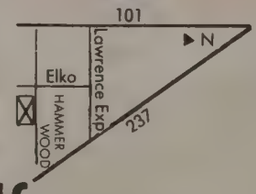
* INTEL 80386SL-20 MHz CPU
* 4 MB RAM Expandable to 16 MB RAM
* 80 MB High Speed Hard Disk Drive
* 64KB Cache Memory on Board
* MS DOS 5.0 w/QBasic
* Battery Life-More Than 4 Hours
* Inverted T for Arrow Keys

SPECIFICATIONS:

* Display-32 Levels of Grayscale -Paper White CCFT Backlit VGA
* RAM-Upgradable to 8 & 16 MB Via Regular SIMM Module ($350, $840)
* I/O Ports-2 Serial, 1 Parallel & VGA Ports
* Intel 80386SL Low Power CPU
* Universal AC Adapter-90-270V AC
* Automobile Power Adapter Available

- Hours: Mon-Fri 8:30-6:30 Saturday 11:00-4:00
- Dealer, VAR, Quantity Discounts Available
- One Year Parts & Labor Warranty
- Prices Subject To Change w/o Notice

Visa & MasterCard Welcome



BONA

INTERNATIONAL SYSTEMS, INC.

TEL: (408) 752-8300 Fax: (408) 734-9273

1286 Hammerwood Ave., Sunnyvale, CA 94089

Bay Area's Computer Magazine

MICROTIMES

BPA

EDITOR-IN-CHIEF
Dennis Erokan

PUBLISHER
Chuck Stanley

CREATIVE
CREATIVE DIRECTOR Lee Ann Nelson
MANAGING EDITOR Mary Eisenhart
ASSISTANT EDITOR Michael Robin
PRODUCTION DIRECTOR Richard Lesovoy
ADVERTISING ART DIRECTOR Jean Stirpe
DESIGN ASSOCIATE Lisa Lusk
SALES LIAISON Sheryl Manchester
TRAFFIC MANAGER Mary Beth DeSantis
PRODUCTION ASSISTANT Alex Marmur
TRAFFIC ASSISTANT Tami Martin
ART STAFF Jennifer Bagwell, Donna Bogener, Christine Boutin, Hilary Dunn, Stephen Noetzel, Diane Wallace
CAMERA OPERATOR John Moorehead
NEWS EDITOR Paul Hoffman
PROOFREADER John Downen
CONTRIBUTING EDITORS Lenny Bailes, John Perry Barlow, John C. Dvorak, Bennett Falk, Ed Kahn, Matthew Leeds, Mike Markowitz, Brock Meeks, David Morgenstern, Tony Reveaux, Birrell Walsh, Jim Warren, Wayne A. Yacco
CONTRIBUTING WRITERS Mikael Blaisdell, Anna Couey, Kathleen Creighton, Adam Gaffin, Peter John Harrison, Fred Lieberman, Woody Liswood, Ken Milburn
CONTRIBUTING PHOTOGRAPHERS Jay Blakesberg, Michael Jay, Susana Millman, Ann Summa
TYPESETTING The Typesetting Shop, Inc.

ADVERTISING
SALES MANAGER Cynthia Lapporte (Southern California)
SENIOR ACCOUNT DIRECTOR Barry Green (Northern California)
NATIONAL ACCOUNT DIRECTORS Jane Shepherd (Southern California), Greg Sage (Northern California)
ACCOUNT EXECUTIVES Marty Gillow, Tracy Longo, Ken Marson, Chloe Vezo, Debra Weinblatt
DIVISION BUSINESS MANAGER Amy Barrett
CLASSIFIED & SUBSCRIPTION SALES Dana Marie Decker (Northern California)
L. A. OFFICE MANAGER Deborah Daiken
L. A. ADMINISTRATIVE ASSISTANT Shannan O'Mara

ADMINISTRATION
ACCOUNTING MANAGER Patricia Buck
SENIOR ACCOUNTANT Linda Hirsch
ACCOUNTING Joaquin Arellano, Kim Carrington, Ali Lary, Vickie Liu, Brian Murray, Bonnie Peterson
CREDIT MANAGER Doug Morgan
HUMAN RESOURCES DIRECTOR Erica Stein-Oakley
ADMINISTRATIVE ASSISTANTS Karla Frizler, Monica Murdock
OFFICE CLERK George Helewa

DISTRIBUTION
DISTRIBUTION MANAGER John Erokan
Assistant Manager/LA Art Holland
DISTRIBUTION ASSISTANT Tricia Moriarty
DISTRIBUTION Dennis Anderson, John Clefstad, Roe Eyth, Frank Grygus, Mike Jett, Don Karr, Juan Lau, Jac Michanovic, Robbie Myers, Racks-Free Distribution, John Dimas Rezendes, Alan Spector, SPS, Wilfredo Villarroel
MICROTIMES FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

BAM PUBLICATIONS INC.
Dennis Erokan, President
Arthur L. Magnus, Chief Financial Officer

This Vol. 9 No. 4 April 13, 1992, Whole No. 94 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 3470 Buskirk Ave., Pleasant Hill, CA 94523. Phone Advertising Office (510) 934-3700. Los Angeles Office, 1800 N. Highland, Suite 506, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 2, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 801 East Katella Ave., Suite #210, Anaheim, CA 92805. Phone (714) 939-2809. MicroTimes™is ©1992 by BAM Publications, Inc. Subscription rates: 13 issues, U.S.: 3rd Class $32 (Allow 3 to 4 weeks for delivery), 1st Class $60 Allow 1 to 2 weeks for delivery). MEXICO & CANADA: Surface Mail $50 (Allow 4 weeks for delivery). Air Mail $70 (Allow 1 week for delivery). OVERSEAS: Surface Mail $50 (Allow 6-10 weeks for delivery), Air Mail $165 (Allow 1 week for delivery). To receive sample issues, please send $4 ($6 for overseas) to cover postage costs. Back issues are $6 each. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

San Jose Office:
87 E. Santa Clara St.
San Jose, CA 95113
TEL: (408) 280-0952
Fax: (408) 280-1013

Atman SYSTEMS CORP.

San Francisco Office:
5856 Geary Blvd.
San Francisco, CA 94121
TEL: (415) 751-6048
Fax: (415) 751-4586

MAGNUM CACHE SYSTEMS

486-33 MHz SYSTEM

- Mini-Tower case w/200W power supply
- Intel 486-33 MHz CPU
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 1.2 MB floppy disk
- 120 MB hard disk
- Trident Super VGA color graphic card w/1 MB RAM
- Super VGA color monitor (1074x768 res. 0.28mm dot)
- 101 enhanced keyboard

$1495

486-50 MHz SYSTEM w/64K

- Ly-77 case w/200W power supply
- Intel 486-50 MHz CPU
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel disk controller
- 1.2 MB floppy drive
- 100 MB hard disk
- Trident Super VGA color graphic card w/1 MB RAM
- MicroScan 2e Super VGA color monitor (1074x768 res. 0.28mm dot)
- 101 enhanced keyboard

ONLY $1762

ATMAN 286 12 MHz System $595

with 52 MB
- Mini tower case w/200W power supply
- 286 12 MHz main board
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel port
- 1.2 MB floppy drive (5¼" size)
- Quantum 52 MB hard disk (17ms access time)
- Mono (Hercules) graphic card
- 14" flat screen amber mono monitor
- 101 key enhanced keyboard

ATMAN 286 20 MHz System $625

with 52 MB
- Mini tower case w/200W power supply
- 286 20 MHz main board
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel port
- 1.2 MB floppy drive (5¼" size)
- Quantum 52 MB hard disk (17ms access time)
- Mono (Hercules) graphic card
- 14" flat screen amber mono monitor
- 101 key enhanced keyboard

ATMAN 386SX 16 MHz System $643

with 52 MB
- Mini tower case w/200W power supply
- 386SX 16 MHz main board
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel port
- 1.2 MB floppy drive (5¼" size)
- Quantum 52 MB hard disk (17ms access time)
- Mono (Hercules) graphic card
- 14" flat screen amber mono monitor
- 101 key enhanced keyboard

ATMAN 386SX 25 MHz System $845

with 52 MB
- Mini tower case w/200W power supply
- 386SX 25 MHz main board
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel port
- 1.2 MB floppy drive (5¼" size)
- Quantum 52 MB hard disk (17ms access time)
- 16 bit VGA color graphic card
- 14" VGA color monitor
- 101 key enhanced keyboard

ATMAN 386DX 25 MHz System $1008

with 105 MB
- Mini tower case w/200W power supply
- 386 25 MHz main board
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel port
- 1.2 MB floppy drive (5¼" size)
- 105 MB hard disk (17ms access time)
- 16 bit VGA color graphic card
- 14" VGA color monitor
- 101 key enhanced keyboard

ATMAN 386DX 33 MHz System $1120

with 64KB Cache + 105 MB
- Mini tower case w/200W power supply
- 386 25 MHz main board
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel port
- 1.2 MB floppy drive (5¼" size)
- 105 MB hard disk (17ms access time)
- 16 bit VGA color graphic card
- 14" VGA color monitor
- 101 key enhanced keyboard

ATMAN 386DX 40 MHz System $1145

with 64KB Cache + 105 MB
- Mini tower case w/200W power supply
- 386 25 MHz main board
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel port
- 1.2 MB floppy drive (5¼" size)
- 105 MB hard disk (17ms access time)
- 16 bit VGA color graphic card
- 14" VGA color monitor
- 101 key enhanced keyboard

ATMAN 486SX 20 MHz System $1255

with 64KB Cache + 105 MB
- Mini tower case w/200W power supply
- 386 25 MHz main board
- 1 MB main memory installed
- IDE floppy/hard disk controller
- 2 serial/1 parallel port
- 1.2 MB floppy drive (5¼" size)
- 105 MB hard disk (17ms access time)
- 16 bit VGA color graphic card
- 14" VGA color monitor
- 101 key enhanced keyboard

386 MAIN BOARD w/CPU SPECIALS

Atman 386 33 MHz w/64 Cache

- Landmark speed V0.99 over 58.7 MHz
- Power Meter V1.3 over 8.24 MIPS
- Norton Utility V4.0 over 42.70SI

$290

Atman 386 40 MHz w/64 Cache

- Landmark speed V0.99 over 67.3 MHz
- Norton Utility V4.0 over 48.9SI

$310

Specifications

- Socket for Intel 80387 33/25 MHz or Weitek 3167 Math Co-Processor Option
- Legal AMI BIOS
- Supports 1 MB up to 32 MB memory on board w/Page Mode operation upgradeable to 64K memory by using 32-Bit RAM card
- Provides fast gate A20, fast reset for OS/2 optimization
- Seven 16-bit & one 8-bit slots for interface cards & one 32-bit RAM card slot
- Fully software compatible: DR DOS, MS-DOS, WINDOWS 3.X OS/2, UNIX, XENIX, NOVELL, CAD/CAM, DTP, etc.

All trademarks are registered by their respective companies.

Atman SYSTEMS CORP.

1 Year Warranty
On Parts and Labor
Walk-In Service Within Hours

BUSINESS HOURS:
MON-FRI: 10AM - 6PM
SAT: 11AM - 5PM
SUNDAY: CLOSED

INDUSTRY INSIGHT

A Document Revolution

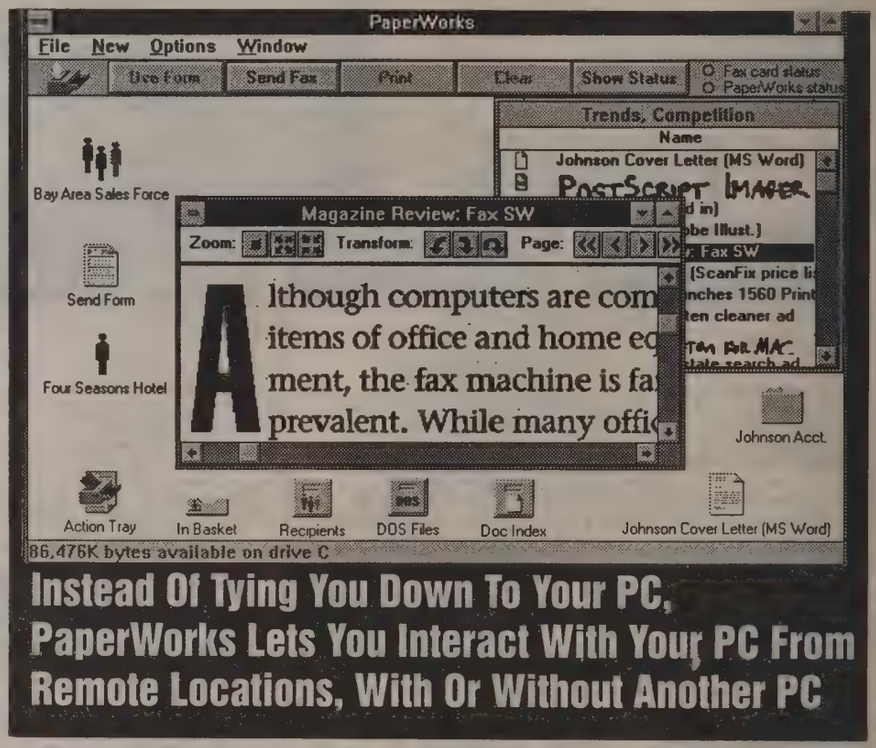
BY PAUL HOFFMAN

XEROX LAUNCHES FAXED-DOCUMENT REVOLUTION WITH NEW TECHNOLOGY

After all these years, many people may be shocked to see Xerox at the forefront of a new computer technology, but its recently announced PaperWorks software product will certainly turn many heads. Instead of taking a current idea and adding new features, Xerox went all the way back to the customer to come up with a radically new idea in document handling. In doing so, it has embarked into uncharted territory that will certainly pay off in the future.

Most software deals with documents as the end product of a series of tasks. Word processors, data bases, and spreadsheets are all based around the idea that you need to create a document using particular actions. Once the document is completed, there are essentially two choices: save it to disk and print it. Most people do both, often just to be sure that the printed version matches their model of how the document "should" look if they hadn't used the computer. In the past five years, there has arisen a third choice, electronically mailing the document saved on disk, but this has been fraught with problems, namely the incompatibility of file formats.

Outside the universe of software developers, businesspeople were muddling by with the restrictions imposed by software. Since documents are often presented to other people, the vast majority of them were printed out and sent, or hand-carried to a meeting. Since you couldn't drag all the possibly relevant documents you've created to a meeting, you often printed out more than you needed. If you guessed wrong about what was needed, and you weren't in your office, you could get someone to fax you the needed documents—assuming you had a printed version in your office or the person there knew how to coax your software into printing. If you were lucky, you could bring all your documents on disk and print them as needed, assuming compatible hardware, software, and printer at the meeting site.



Instead Of Tying You Down To Your PC, PaperWorks Lets You Interact With Your PC From Remote Locations, With Or Without Another PC

Xerox looked at this dilemma, then looked at the communication technology most commonly used for remote document transmittal: the fax. They discovered that there were fax machines everywhere, and that high-quality fax send/receive boards had become common in PCs. But the problem remained: How can you request that a document on your PC be faxed to you? You could ask someone to run the program that created the document, print it, and fax it; but that assumes the existence of a person at the right time and place (often not true if you're many time zones away) who knows how to run your software (often not true if the person is an assistant or coworker who mostly uses other software).

PaperWorks solves the problem by letting you fax requests for documents directly to your PC. You fill out a form requesting a particular document, fax it, then hang up. A moment later, your PC dials the fax you've specified and sends the document. PaperWorks can also work in reverse: you can fill out a form telling it to send copies of the document following the form to anyone in your database, and to save the document on your disk for later retrieval.

The main advantage of PaperWorks to traveling businesspeople and multi-site offices is obvious: freedom from having PC hardware everywhere. All your base PC

Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on Internet (phoffman @well) and MCI Mail (264-3171). He also writes popular microcomputer books.

BEST PRICES BEST QUALITY BEST SERVICE

Basic System with 1 MB **486-50 w/64K EISA +$750**	**$1035**
Basic System **486-33 EISA w/256K Cache**	**$1330**
Basic System with 1 MB **486-33 w/64K Cache**	**$769**
Basic System with 1 MB **386-40 w/64K Cache**	**$449**
Landmark 54 MHz, Basic System with 1 MB **386-33 w/64K Cache**	**$439**
Landmark 30 MHz, Basic System with 1 MB **386-25 MHz**	**$387**
Landmark 30 MHz, Basic System with 1 MB **386-25SX**	**$345**
Landmark 25 MHz, Basic System with 1 MB **386-20SX**	**$325**
Landmark 21 MHz, Basic System with 1 MB **386-16SX**	**$319**
Landmark 16 MHz, Basic System with 1 MB **286-12 MHz**	**$269**

MONTHLY SPECIALS

CTX Non-Interlace
0.28 (1024x768) Monitor $325
486-50 MHz/64K Cache/EISA w/CPU $210/899
SVGA Monitor w/Card (1024x768) $275
425 MB Quantum Hard Drive w/256K Cache $999
486-33/40/50 Main Board/64K Cache ...$159
486-33/64K Cache EISA Main Board USA $750
386-33/40 Main Board/64K Cache $149
Sound Commander 2.0/Microphone $89
Mouse Hi - Res $15
Super VGA Monitor 0.28mm $255

486/386/286 SYSTEMS INCLUDE:

Motherboard & CPU, Basic Memory Installed, 1:1 2HFD Controller, 1.2 or1.44 MB FDD, Internal Clock/Calendar, Math Co-Processor Socket, Case w/PS, 101-Key Enhanced Keyboard

486-33 MHz 64K

- Basic System Configuration
- 120 MB Hard Disk IDE 18ms
- 14" SVGA Monitor/Impression VGA Card

$1,379

486-33 MHz EISA 256K

- Basic System Configuration
- 200 MB Hard Disk IDE 18ms
- 14" SVGA Monitor/Impression VGA Card

$2,165 Made In USA

386-40 MHz 64K

- Basic System Configuration
- 120 MB Hard Disk IDE 18ms
- 14" SVGA Monitor/Impression VGA Card

$1,069

386-33 MHz 64K

- Basic System Configuration
- 105 MB Hard Disk IDE 18ms
- 14" SVGA Monitor/Impression VGA Card

$1,024

386-25 MHz DX

- Basic System Configuration
- 40 MB Hard Disk IDE 18ms
- 14" SVGA Monitor/Impression VGA Card

$863

386SX-16 MHz

- Basic System Configuration
- 40 MB Hard Disk IDE 18ms
- 14" SVGA Monitor/Impression VGA Card

$765

MOTHERBOARD

386SX-25 MHz/CPU	$145
286-16/12 MHz 0 Wait/CPU	78/68
386SX-16/20 MHz/CPU	129/139
386-25 MHz 64K/CPU	249
386-33 MHz 64K/CPU	259
386-40 MHz 64K/CPU	269
486-33 MHz EISA/CPU	1055
486-25 MHz 64K/CPU	550
486-33 MHz 64K/CPU	580
486-50 MHz/CPU	880

MONITORS

14" Flat Screen	$95
VGA Monitor	199
Viewsonic 5D 0.25	579
Super VGA 0.28 1024x768	255
14" VGA Impression Super	245
20" Mitsubishi	1903
Sony 1304	569
Nanao 9070S/9080i 0.28	990/1025
V4E/V1	310/235
17" Samsung	850

DRIVES

1.2 Floppy Drive.	$55
1.2 Teac	60
1.44 Teac	60
40 MB WD	199
ST 251	225
80 MB WD IDE	190
60 MB IDE	260
100 MB NEC IDE	318
120 MB Conner IDE	345
150 MB Maxtor E/S	490
200 MB IDE	560
200 MB SCSI	550
300 MB IDE	865
660 MB Maxtor E/S	1350

INTERFACE CARDS

Monographic Card w/ Print port (MGP)	$15
Oak VGA-256K (800x600, 16-Bit)	36
Oak VGA-512K (1024x768, 16-Bit)	46
Trident 1 MB (1024x768, 256K)	74
Paradise VGA 512K	65
Paradise IIs 1 MB (3200 colors)	189
IDE Controller Card (2S/1P/1G)	25
ESDI Ultra 132K Card	140
ATI Graphics Ultra/1MB/1Mouse	475
Diamond Plus/Hi-Color	138/153
Diamond Stealth VRAM 1MB	265
Orchid Hi-Color	150
Orchid Color	115
Orchid Fahrenheit	265
Network Card/Twisted Phone	120/130
2400 Modem Zoltrix	45
9600/2400	69
9600 Modem	290
CD-ROM/CD Software	395

KEYBOARD

101 Keyboard	$22
Keytronic 101 Keys	45
Fujitsu 101 Keys	45
Track Ball Keyboard	65
Maxi-Switch 101 Keyboard	32

MISC.

Mini AT Case/PS	$65
230W Power Supply	45
Logi Hi-Res Mouse	65
Logi Trackman Ser/Bus	69
Full Tower Case/PS	115
Mini-Tower Case w/PS	65
Mid-Tower Case/PS	95
80387-16/20	140/160
80387-25/33	145/195
80486-25/33	395/405
1 MB SIMMS 70ns	38
Panasonic KX-P1123	199

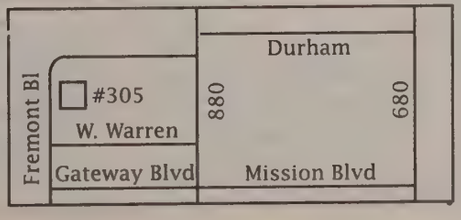
1 YEAR WARRANTY PARTS & LABOR ON SYSTEMS

KING STAR COMPUTER, INC.

46560 Fremont Blvd. #305, Fremont, Ca 94538
OPEN Mon-Fri: 8:30-6:00 Sat: 11:00-5:00

(510) 659-8590
Fax: (510) 659-8644

- Prices Cash Only
- Dealer Inquiries Welcome
- Prices Subject To Change W/O Notice



needs is one of the supported fax send/receive boards, a 386 or better CPU, Windows, and PaperWorks (which sells for $249). You leave your PC on with PaperWorks running so that it can receive your faxed instructions, just as it would receive other faxes.

PaperWorks has many features even the most advanced fax software lacks. When a fax arrives, PaperWorks checks each page to determine if it is a PaperWorks form. All non-form pages are stored in a compressed form in a database by document. You can name your documents whatever you want (you are not hampered by MS-DOS's file names); you can associate them with different tasks (so that they appear in more than one task folder); and you can view them or fax them at any time. Xerox included some of its advanced image-scanning software in PaperWorks so that skewed pages are automatically straightened and small characters are made easy to read with smart grayscale technology. If you receive many faxes on your PC, you may want to get PaperWorks just for the display technology, but you'll find yourself using the remote features almost immediately.

PaperWorks solves the problem by letting you fax requests for documents directly to your PC. You fill out a form requesting a particular document, fax it, then hang up. A moment later, your PC dials the fax you've specified and sends the document.

PaperWorks is a major step in understanding how users handle documents. Instead of tying you down to your PC, PaperWorks lets you interact with your PC from remote locations, with or without another PC.

The first version allows you to retrieve and distribute faxed documents; clearly, Xerox is not stopping there. Xerox will license some of the technology to other companies so you can perform more tasks through the fax (such as controlling other aspects of your PC) and will probably come out with some of its own extensions, such as equal support for voice.

Xerox's decades of research into images, language, multiplatform development, and office sociology will certainly manifest itself in extensions to PaperWorks that will integrate with Xerox's other businesses. If PaperWorks catches on, the constant hassles many people experience with modems may be replaced by the simplicity of the fax machine.

INTEL RELEASES FAST 80486

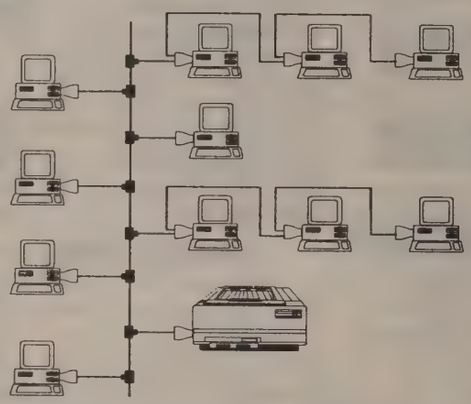
Just when you thought you had all the Intel and Intel-compatible CPUs straight, Intel introduces a new and fairly different version of the 80486. The new chip, called the 486DX2, allows manufacturers to put fast CPUs in sys-

Hassle-Free Printer Sharing

Low-cost, modular printing network for up to 16 computers

SNAP transmitter - $59

SNAP receiver - $69



Here's how your printer sharing network can grow with your office. It's called SimpLAN *SNAP*. Simply plug a transmitter to the parallel port of each computer, a receiver to the printer and connect with up to 1200 feet of modular phone cable. As you add computers to your office, you simply "snap" them in anywhere along your existing *SNAP* network. *SNAP* lets you connect up to 16 computers to a printer or printer sharing device. 3-way couplers provided by ASP let you connect the computers in any configuration. Installation is a snap.

SNAP requires no software and no training! What could be easier? Everyone prints as they did before. No one has to move his or her furniture. In other words, *SNAP* is an instant network!

ASP offers a complete line of printer sharing solutions. To order your *SNAP* or for a dealer near you call:

800-445-6190

Call for your FREE Catalog

ASP

ASP COMPUTER PRODUCTS, INC.

160 San Gabriel Dr.
Sunnyvale, CA 94086
Tel: 408-746-2965 Fax: 408-746-2803

PC WAREHOUSE

80 Locations Nationwide

You'll come for the price
You'll stay for the service

NOVELL Networks
Service | Consulting | Installation

SONY LASER LIBRARY
External CD-ROM Package
* 640MB Capacity
* Interface Adapt.
* Drivers
* 6 Educational Software
$549

NEC AUTHORIZED DEALER
Ultralite Notebook
*386SX/20MHz
*2MB RAM
*1.44MB FDD
*DOS 5.0
*VGA LCD
SX/20 40MB $2595

SilentWriter 95 $1495

EXT CD ROM
* 680 MB
* 7 Softwares
* Speakers, IF
$569

Artec Scanners
A400z Handy.....$110
A4000c Flatbed..$1050

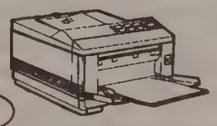
Encyclopedia Notebook $1749
*Intel 386SX-25, 2-5MB RAM
*VGA BACKLIT LCD
*Build in Ac Adapter
*80 MB hard disk drive

Colorado Tape Backup
120MB .....$209 250MB $279

Kenitec 60 MB Notebook $1599
* Intel 386SX-20
* 1-5 MB RAM
* VGA LCD
* MS DOS 5.0

Kenitec SVGA Monitor
14" 1024X768 0.28 .....$289
14" 1024X768 0.28 Low Radiation.....$329
14" 1024X768 0.28 Non-Interlaced.....$349
Resaler Inquiry Welcome

LaserJet IIIP HEWLETT PACKARD
*High Quality 300dpi
*4 page per minute
*1-5MB memory
*HP PCL 5 language
In Stock
Lower Cassette.....$169



LaserJet III/IIID/IIIsi
$$ Call for current price $$

LaserJet IIP+

DeskJet 500C Color

ScanJet IIc Color Flat-Bed Scanner

1MB for IIP/III/IIID.....$79
2MB for IIP/III/IIID.....$119
AppleTalk for Mac.....$199
ScanJet IIP.....$Call
PaintJet.....$679
PostScript.....$489

Panasonic Office Automation
KX-P1180i.....$159
KX-P1123.....$195
KX-P2180.....$179
KX-P1624.....$349
KX-P2123.....$249
KX-P2624.....$379
KX-P1695.....$369

KX-P1124i..$275

GSX-140+
*24 pin, 192 cps
*Auto paper park
*360 dpi, 8K buffer
*LCD Control Panel
$309

CITIZEN
200GX.....$169
GSX-130.....$249
GSX-145.....$399
Color Kit.....$49

Arche Notebook
386SX/16 20MB HDD.....$1299
386SX/16 40MB HDD.....$1499
386SX/20 40MB HDD.....$1559
386SX/20 60MB HDD.....$1699

Orchid
ProDesigner IIs 1024X768 1MB
$179
Fahrenheit 1280X1024 1MB
$269

PC WAREHOUSE SX-16/20/25	PC WAREHOUSE 386/25	PC WAREHOUSE 386/33	PC WAREHOUSE 386/40	PC WAREHOUSE 486/33	PC WAREHOUSE 486/50
*SX-16/20/25 CPU *1-16MB RAM (70ns) *AMI BIOS *Teac 1.2MB FDD *IDE FD/HD CTL *2S\1P\1G ports *101-key keyboard	*80386-25 CPU *1-32MB RAM (70ns) *0-64K CACHE *AMI BIOS *Teac 1.2MB FDD *IDE FD/HD CTL *2S\1P\1G ports *101-key keyboard	*80386-33 CPU *1-32MB RAM (70ns) *64-128K CACHE *AMI BIOS *Teac 1.2MB FDD *IDE FD/HD CTL *2S\1P\1G ports *101-key keyboard	*80386-40 CPU *1-32MB RAM (70ns) *128K CACHE *AMI BIOS *Teac 1.2MB FDD *IDE FD/HD CTL *2S\1P\1G ports *101-key keyboard	*80486-33 CPU *1-32MB RAM (70ns) *64-256K CACHE *AMI BIOS *Teac 1.2MB FDD *IDE FD/HD CTL *2S\1P\1G ports *101-key keyboard	*80486-50 CPU *1-32MB RAM (70ns) *256K CACHE *AMI BIOS *Teac 1.2MB FDD *IDE FD/HD CTL *2S\1P\1G ports *101-key keyboard
$359/364/369	**$429/$439**	**$479/$499**	**$519**	**$799/$859**	**$1149**

One Year Parts and Labor In-store Warranty.

***** Free Serial Mouse For Complete System.*****

4/01/92

Monitors

NEC 5FG.....$1499	SEIKO 1440.....$459	12" Mono Amber.....$89
		14" Mono Amber.....$119
SONY 1304s...$579	SEIKO 1450.....$549	14"paper whiteSVGA....$169
SONY 1604s.$1099	SEIKO 1760.....$1299	Nanao 9070u.....$939
SONY 1936..$2429	Kenitec SVGA.....$289	Nanao 9080i.....$1039
NEC 3FGx.....$659	Kenitec Low Radiation..$329	Nanao 550i.....$1279
NEC 4FG.....$789	Kenitec Non-interlaced..$349	VGA 640X480.....$229

Video Adapters

OAK 800X600 VGA.....$39	ATI GraphicUltra+SVGA 1MB.....$539
OAK 1024 512k/1MB.....$69/89	ATI Graphic Vantage+SVGA 1MB.....$379
Trident 1024 512k/1MB...$69/89	Orchid ProDesigner IIs w/1MB.....$179
Genoa 6400A 70Hz VGA.....$109	Orchid Fahrenheit 1280X1024 1MB.....$269
Tseng Labs 1024 1MB.....$109	Speedstar Hi-Color 70Hz 1MB.....$189
	Diamond Stealth VRAM W/1MB.....$309
	Ahead 1024 SVGA 1MB.....$149

Hard Drives

Conner/Alps 40MB IDE..$219	Maxtor 340MB IDE.....$969
Conner 120MB IDE.....$369	Maxtor 120MB SCSI.....$369
Conner 200MB IDE.....$609	Maxtor 213MB SCSI.....$599
Maxtor 80MB IDE.....$309	Maxtor 340MB SCSI.....$969
Maxtor 120MB IDE.....$369	Quantum 52MB IDE.....$239
Maxtor 213MB IDE.....$599	Quantum 120MB IDE....$409
	Quantum 240MB IDE....$649

Modems

Zoltrix 2400 Int/Ext.....$49/99	
Zoltrix 24/96 Fax/Modem....$89	
Everex 2400 Int/Ext.....$99/179	
Everex 24/96 Fax/Modem.....$279	
Intel 2400 Int/Ext.....$159/199	
Intel Satisfaxtion $389	

Scanners

HP ScanJet+ w/IF.....$1129	
HP ScanJet IIc w/IF.....$1499	
Microtek 600z Color.....$1379	
Scan Plus Color.....$799	
Logitech Scanman32.....$169	
Logitech Fotoman....$599	

Misc

Chicony Keyboard.....$39	
SummaSketch.....$339	
Sound Blaster.....$119	
Serial Mouse.....$20	
Tape Backup.....$Call	
Memory.....$Call	

Sunnyvale
1082 E. El Camino #3
(Btw Lawrence & Henderson)
(408) 985-1309

MON-FRI 9AM-7PM
SAT 10AM-5PM
Cash Prices Reflected
Financing Available
Corporate Inquiry Welcome

Palo Alto
454A California Avenue
(Btw El Camino & Alma)
(415) 321-9288

MasterCard VISA

Prices & specs subject to change w/o notice

San Bruno
1590 El Camino Real #G
(Btw San Bruno & Millbrae)
(415) 225-9026

The 486DX2-50 is about 20% slower than the full 50MHz chip and costs about 10% less to computer manufacturers. However, since it can be used in systems designed for the 25MHz 486DX with almost no change, the total system cost will be much lower.

tems originally designed for slower CPUs. This translates directly to lower-cost computers, because fast CPUs demand that many of the other chips in the system also be fast, and thus more expensive.

The 486DX2, also called the "clock doubler" chip, allows the CPU to run twice as fast internally as externally. The first chip announced and shipping is the 486DX2-50. This chip runs internally as fast as Intel's 50MHz 486DX but can be used in systems that were designed for the 25MHz 486DX. The 486DX2-50 is about 20% slower than the full 50MHz chip and costs about 10% less to computer manufacturers. However, since it can be used in systems designed for the 25MHz 486DX with almost no change, the total system cost will be much lower. These systems will offer more power than 33MHz systems for more cost, with about an equal tradeoff. Dozens of manufacturers have already announced systems based on the 486DX-50.

Intel will also release a version of the chip that works in the second chip slot of many 25MHz 486SX systems within a few months. The upgrade for these systems consists of simply putting the new chip into the second slot. This upgrade will significantly speed up your system, but at a steep price, since your original CPU is then disabled. Intel did not announce the price of the 486SX upgrade.

Intel's release of the DX2 series comes at the same time that many manufacturers have realized that it is very difficult to design 50MHz systems. The faster the CPU, the greater the amount of radio frequency interference (RFI) generated. Designing a board to bring the RFI down to legal standards at very high speeds has become so difficult that many manufacturers are ignoring the 50MHz 486DX. Now, they can offer a system that is almost as fast as a 486DX system without all the design headaches. The slight speed decrease will be reflected in slightly lower costs.

It is widely expected that Intel will release a 66MHz version of the 486DX2 this fall; the new chip will work with systems designed for 33MHz. Those systems will certainly run faster than 50MHz 486DX systems and may cost less, unless Intel artificially increases the price of the chip. Within eighteen months, Intel may even release a 100MHz 486DX2.

APPLE EXPLAINS DIRECTION OF MACINTOSH OS

In an effort to quell fears about Taligent and the Macintosh, Apple described specific plans for the future of Macintosh software, emphasizing that even after the first release of Taligent a few years from now, the Macintosh operating system would live on. By stressing the future of the Macintosh operating system, Apple gave developers a much clearer picture of the future than Microsoft did three years ago when it tried to differentiate MS-DOS, Windows, and OS/2 (NT hadn't even been mentioned then).

The basic feature of the future is modularity. You will be able to buy specific groups of features and ignore others that you don't need. Until now, your only choice was to buy the whole operating system. This often forced you to upgrade your hardware in order to keep up. This situation was similar to MS-DOS before Windows v3 was released: it was all or nothing.

Starting immediately, Apple will sell individual modules that add on to the basic operating system. These modules will include the Open Collaboration Environment (OCE) and a new imaging model for more consistency between different screens and printers. It is also likely that the next version of QuickTime, Apple's multimedia platform, will also be released as an optional module.

Apple also stated its willingness to license many of the modules for non-Macintosh environments, specifically Windows 3.1. It is already discussing such licensing with some third parties, or it may release non-Macin-

Technology News From Japan

(Excerpted from the weekly news digest of Japan Marketing Group, 400 Groveland Ave., Suite 312, Minneapolis, MN 55403, 612/871-7889. JMG covers products and events in the Japanese computer industry.)

➤Kokuyo, Japan's largest office-products company, has signed a dealer contract with Apple Computer. Kokuyo currently uses a five hundred-Macintosh network in house, and has recently opened an in-house information systems training school/showroom facility in Shinagawa, Tokyo, in order to study the market and cultivate new demand.

➤Canon has announced that it will port NeXTStep 486, the 486-based version of NeXT's operating system, to its own 32-bit PC line. In addition, it will make the Japanese-language version of the OS available to other PC vendors in Japan. The operating system will require high-resolution graphics and a hard disk of at least 120MB.

➤Tokyo-based Ergosoft has formed a marketing partnership with Macromind Paracomp, which wanted stronger presence in the Japanese multimedia market. It started marketing an English-language version of Swivel 3D Professional, Swivel Man, and Model Shop II in February, and Japanese-language versions will follow in April.

➤A Tokyo company called Software Japan is now providing an information service on software firms via fax. It will allow users to obtain information by fax in real time, while freeing information providers from having to deal with individual requests for product catalogs and other promotional literature. Information providers are charged approximately $40 per month for five A4 pages' worth of space on the system.

➤Symantec has joined forces with the Tokyo software firm MP Technology, which will localize Norton Desktop for Windows for the Japanese market. In addition, PC Software distributor Softbank will distribute Symantec products through three hundred PC stores across the country. Symantec software for the predominant NEC PC-9801 and IBM DOS/V operating systems is expected to go on sale in July.

NEW!

Now Shipping! 16 million colors for Windows®, AutoShade®, 3D-Studio® and more.

The new Genoa MultimediaVGA provides 24-BIT true color solutions at affordable prices. The graphics professional can reach 16 million colors at 640 x 480 and 64,000/32,000 colors at 800 x 600.

Standard 24-Bit drivers include Windows, Autoshade, 3D Studio and more. Of course the MultimediaVGA 7900 comes with our popular FlickerFree™ and Safescan™ technologies.

Also available Genoa's WindowsVGA 8000 series of Window accelerater products. All this and more from your obvious choice in computer graphics...Genoa.
For more information call your distributor or nearest dealer today.

Call your distributor or dealer for a demonstration now.

FLICKERFREE™

Genoa SYSTEMS CORPORATION
The Ultimate Graphics Solution.

Genoa Systems Corporation
75 East Trimble Road
San Jose, CA 95131 USA
Telephone: 1 - 408 - 432 - 9090
Fax: 1 - 408 - 434 - 0997
Genoa BBS: 1 - 408 - 943 - 1231

© 1992 Genoa Systems. All registered and unregistered trademarks are the property of their respective owners. Specifications are subject to change without notice.

tosh versions of the modules themselves. This would allow users of other platforms access to the same features as Mac users, and allow software companies to more easily make programs for multiple systems.

Apple announced that it would port OCE and QuickTime to Windows. There was some disagreement about whether the base operating system would ever be licensed, with Apple Chairman John Sculley denying it but other executives hinting that it might under the right conditions.

During the announcement, Apple also showed many of the features in the next release of QuickTime. Although already well ahead of the MPC multimedia standards for PCs, Apple wants to be sure that anyone interested in multimedia tools will choose a Macintosh. The new features, due this summer, include MIDI (the consumer industry standard for keyboards and other electronic instruments), standard NTSC video for connecting to VCRs and videodisc players, better compression technology for smaller files and faster retrieval from disk, closed captioning on QuickTime movies to help hearing-impaired users, support for the Kodak PhotoCD format, and use of the SMPTE time code for professional editing. There will also be internal support for interactive QuickTime movies so that you can stop a movie and choose different endings.

The announcements went far to allay fears that Apple was betting too heavily on Taligent, its joint venture with IBM. Apple readily acknowledged that Taligent is too far away for Apple to rely on or to assume that many Mac users would want to switch. It is positioning Taligent as a solution for corporations who need to rapidly create new programs, saying that many users will want to use it to take advantage of other new programs as well, but that the base Mac operating system will continue to grow and will always be a challenge for Microsoft.

SILICON GRAPHICS BUYS MIPS

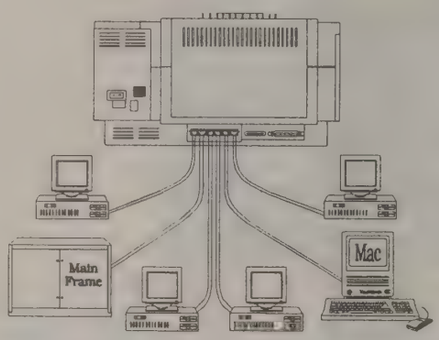
In a move sure to shake up the RISC market, Silicon Graphics Inc. agreed to buy Mips Computer Systems for over $400 million. The deal, likely to be approved by the shareholders of both companies, gives Silicon Graphics much more control over the future of the RISC CPUs designed by Mips and used by Silicon Graphics, DEC, and many other companies.

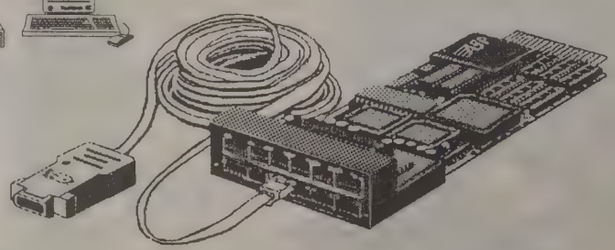
In the last year, Mips has been losing money and has not kept up with other RISC manufacturers like Sun. Because 80% of Mips' income comes from selling computer systems, not designing chips, it was spending many more resources in that market than in keeping the Mips CPU line competitive. Because Silicon Graphics uses Mips CPUs, it wanted to have more control over their development.

The sale worries many other Mips customers, particularly those who compete with Silicon Graphics. Silicon Graphics will now have total say in what new features get implemented in future versions of the Mips CPUs, forcing its competitors to use those same features or find a different CPU. Fortunately, there are many other RISC chips available, and this move could cause a steady migration away from Mips to other RISC chips. With DEC abandoning the Mips CPUs for its new Alpha series over the next few years, Silicon Graphics needed to either prop up the Mips line or find a new CPU, and it clearly decided for the former. ■

Hassle-Free Printer Sharing

for the HP LaserJet II, IID, III and IIID





Here's how you and your co-workers can have your own HP LaserJets for less than $85/user. It's called SimpLAN™ *ServerJet*™. Simply plug the *ServerJet* into the 'Optional I/O' of your HP LaserJet. Stretch hundreds of feet of phone cable to each computer. Then, up to 12 people can simultaneously *whoooosshh* documents to the LaserJet at speeds as fast as 115,200 baud.

The *ServerJet* lets 4, 5, 6, 7 or 12 computers access your HP LaserJet. A large 256KB - 4MB buffer spools print jobs, freeing users to continue working. And because you may have printers other than HP LaserJets, ASP delivers a complete line of printer sharing solutions.

To order your *ServerJet* or for a dealer near you call:

800-445-6190

Call for your FREE Catalog

PC MAGAZINE

"The ServerJet is the smoothest and most practical way I know to share a LaserJet."

Frank J. Derfler, Editor
PC Magazine, 1/15/91

ASP

ASP COMPUTER PRODUCTS, INC.

160 San Gabriel Dr.
Sunnyvale, CA 94086
Tel: 408-746-2965 Fax: 408-746-2803

SimpLAN & ServerJet are trademarks of ASP Computer Products, Inc.
HP LaserJet is a registered trademark of Hewlett-Packard Co.

The #1 Source For Network Solutions!

Special Limited Time Offer on Novell Products and Education

NOVELL PRODUCTS

Netware 2.2

5 Users	475
10 Users	1,050
50 Users	1,840
100 Users	2,950

Netware 3.11

5 Users	590
10 Users	1,315
20 Users	1,840
50 Users	2,685
100 Users	3,675
250 Users	6,565

Lan Workplace For DOS v4.0 1-User	336
Lan Workplace For DOS 10-User	1,490
Lan Workplace For Mac v1.1	188
Lan Workplace For OS/2	369
NetWare for Mac (NLM) 20-Users	669
Novell MHS Personal Edition v1.5	100
Novell MHS Network Edition v1.5	369
Novell NetWare NFS v1.2	3,731

NOVELL

For a limited time, **Network Innovations** will be offering these **Novell** Products at a special introductory price. This is an opportunity for us to introduce you to our exceptional service and support. If you are planning or expanding a network, call us today for a complete quotation. Our unique Quotation System gives us access to over 70,000 hardware, software and communications specifications.We can give you instant quotes on over 11,000 items. We are confident you will not find a better value anywhere else.

NOVELL & SCO EDUCATION

NetWare System Manager (2.x)	3 DAYS
NetWare 2.x Advanced Sys. Manager	2 DAYS
NetWare System Manager (3.x)	3 DAYS
NetWare Service & Support	5 DAYS
Networking Technologies	3 DAYS
CNE Program	5-15 DAYS

SCO Introduction to System V	2 DAYS
SCO UNIX System V/386 Administration for Technical Users	5 DAYS
SCO Open Desktop Admin & Support	5 DAYS

Please call for fees and schedule

Novell Authorized Reseller

SCO THE SANTA CRUZ OPERATION

SERVER BASED BACKUP

Server Based Backup Solutions At Exceptional Values!

Network Innovations Presents **Cheyenne Software's ARCserve** server based backup solutions. ARCserve delivers attended and unattended backup and restore services for users across the internet network. ARCserve offers options for both workstation and file server backup to a central, shared device. Supports backup to hard disk, optical disk, 4mm DAT, 8mm using QIC-02 or SCSI controllers. Handles both DOS and Macintosh files and directories. Preserves NetWare file attributes and rights. Versions available for NetWare 2.2 or 3.11. Easy to use. Exceptional Performance!

For Netware 2.2

1.3 GB DAT	CALL
2.2 GB 8mm (Exabyte)	From $3,375

For Netware 3.11

1.3 GB DAT	CALL
2.2 GB 8mm (Exabyte)	From $3,899

Other configurations available. Add $300 for on-site installation and training.

SERVICES

- Free Initial Consultation
- Complete Turn Key Solutions
- Complete System Integration
- Custom Cabling
- Software & Hardware Training
- Consulting & Project Management
- On-site installation
- Telephone support
- Computer to Computer support
- Professional Service Contracts

NETWORKING CD-ROMS

Micro Design International provides a CD-ROM solution with operating system support for DOS, OS/2, Netware and UNIX. The LaserBank 600 CD-ROM family is Novell certified. CDs are mounted as standard NetWare volumes taking advantage of available NetWare cache. Any user on the network may be granted access without redirector software installed on the workstations. The Kit consist of an internal CD-ROM drive, EISA, ISA, or Micro Channel adapter, & The SCSI Express Software. SCSI Express loads as an NLM on NetWare 3.x servers. A Separate CD-ROM server is not required.

NetWare 2.x Solutions start at $1,625
NetWare 3.x Solutions start at $1,799

OUR COMMITMENT TO EXCELLENCE

When designing your network, acccept no compromise

- **Don't compromise on service.** The foundation of our company is built on superior customer service. You should expect excellent service, it's a standard for us.
- **Don't compromise on technical expertise.** We are primarily a networking company. We provide a full range of services for all your networking needs. Our approach shows in our exceptional expertise of networks and networking solutions. And of course, we are Novell Authorized.
- **Don't compromise on value.** We only recommend solutions which will meet your needs. You can be assured that our networks will be the best value for your money.

° One year parts and labor warranty
° 15% restock charge on non-defective returns.

NETWORK MANAGEMENT

Networth offers intelligent network managment with their Series 4000 Department Command Center. Selected *Editors' Choice* by **PC Magazine**, the concentrator consist of a 3, 6, or 10 slot chasis housing combinations of 10 Base-T RJ-45 modules, Telco modules, Fiber modules, and/or Smart 10 Base-T managment modules. This system offers network segmenting by module, retiming in every module, NetWare IPX-Level Management, module "Hot Swap", & remote paging to alert you of problems.

If you are building or expanding an Ethernet network, call us for additional information & a free demo disk. Demonstration units are also available to qualified customers.

NETWORKING CARDS

We feature high performance lan cards from the following manufacturers:

Ethernet:

3Com	Intel
Tiara	Aquila
Gateway	Dlink (Pocket)
Xircom (Pocket)	Racal InterLan
Pure Data	Mylex

Arcnet:

Tiara	Dlink (Pocket)
Aquila	Thomas Conrad
SMC	Xircom (Pocket)

10 Base T (Twisted Pair Ethernet):

Intel	Gateway
Tiara	Aquila
Racal InterLan	Synoptics

NETWORK INNOVATIONS
90 South Spruce Ave., Suite N
So. San Francisco, CA 94080
Phone (415) 872-1377
24 Hr. Fax/Voice (415) 872-6634

NETWORK INNOVATIONS
(415) 872-1377

Selling Storm Socks High-Tech

An onslaught of "sell" orders during the month ended March 13 took the wind from the sails of the recently high-flying high-tech sector.

The bottom line, not surprisingly, was a sharp descent in the Microtimes Stock Index, which suffered a 96-point, 2.4% drop before coming to rest at 388.19. The Dow Jones Industrial Average, on the other hand, recorded a mild setback, falling a modest 10.1 points (.31%) en route to a close of 3235.91.

Turning to the big movers in our most active issues section: Hewlett-Packard took both largest dollar and percentage-gained honors last month. The reason: stronger-than-expected fourth-quarter earnings and sales signaled that company's recent cost-cutting measures are bearing fruit. The result: Hewlett-Packard's stock soared $13.75 a share, or 21.6%, to $77.38.

Conversely, Silicon Graphics took both largest dollar and percentage-lost dishonor last month. The reason: analysts were concerned that Silicon Graphics' merger with MIPS would hurt SGI's earnings power in the near future. The result: SGI's shareholders stood by as their shares toppled $6.50 a share, or 23.4%, to conclude matters at $21.25. MIPS closed the month at $13, up $1.88 a share, or 16.9%. Separately, Silicon Graphics completed a 2-for-1 stock split last month.

Oracle was very actively traded last month amid reports that its third-quarter earnings report, due March 24, may prove disappointing. Investors quickly took an axe to the share price of the software concern, carving out a 16.1% loss for the company. Oracle closed the month at $17 after hitting a 52-week high of $21.13 earlier in the monthly trading session.

In similar fashion, AST Research stumbled sharply after analysts cut their earnings estimates for the company. As a result, AST's shares contracted 15.9% before calling it quits at $17.25.

Lotus had a stellar month, rising a robust 18.9% to $38.63. Developments at Lotus last month included positive comments regarding the company's new SmartHelp software program, together with "buy" recommendations on the stock from Morgan Stanley and Cowen.

EXCH	COMPANY		TICKER SYMBOL	CLOSING PRICE 02/14/92	CLOSING PRICE 03/13/92	NET CHANGE IN PERIOD	PERCENT CHANGE IN PERIOD	PRICE/ EARNINGS RATIO	ANNUAL DIVIDEND RATE	ANNUAL DIVIDEND YIELD	52 WEEK HIGH	52 WEEK LOW
	SOFTWARE											
OTC	Adobe		ADBE	58.00	52.00	-6.00	-10.34	23	0.32	0.62	68.50	41.25
OTC	Aldus	(L)	ALDC	32.75	28.00	-4.75	-14.50	18	0.00	0.00	59.88	28.00
OTC	Autodesk	(L)	ACAD	24.75	29.75	5.00	20.20	13	0.48	1.61	62.25	23.25
OTC	Borland		BORL	73.00	67.75	-5.25	-7.19		0.00	0.00	86.75	39.50
OTC	Informix		IFMX	30.50	26.00	-4.50	-14.75	32	0.00	0.00	33.00	4.88
OTC	Lotus		LOTS	32.50	38.63	6.13	18.85	39	0.00	0.00	40.75	18.00
OTC	Microsoft		MSFT	118.50	121.00	2.50	2.11	40	0.00	0.00	133.25	60.50
OTC	Novell		NOVL	59.88	58.75	-1.13	-1.88	48	0.00	0.00	65.00	22.63
OTC	Oracle	(H)	ORCL	20.25	17.00	-3.25	-16.05	68	0.00	0.00	21.13	7.00
OTC	Software Publishing		SPCO	22.88	24.63	1.75	7.65		0.00	0.00	29.13	12.50
OTC	Symantec		SYMC	44.25	44.25	0.00	0.00	60	0.00	0.00	51.00	19.50
	HARDWARE											
OTC	Apple		AAPL	64.13	63.13	-1.00	-1.56	24	0.48	0.76	73.25	40.25
OTC	AST Research		ASTA	20.50	17.25	-3.25	-15.85	8	0.00	0.00	32.75	14.50
NYS	Commodore		CBU	14.88	14.38	-0.50	-3.36	8	0.00	0.00	21.63	10.13
NYS	Compaq		CPQ	31.50	28.75	-2.75	-8.73	20	0.00	0.00	67.00	22.13
NYS	Digital Equipment		DEC	59.63	59.88	0.25	0.42		0.00	0.00	76.88	48.50
OTC	Dell	(H)	DELL	32.38	35.50	3.13	9.65	17	0.00	0.00	39.50	20.25
NYS	Hewlett-Packard	(H)	HWP	63.63	77.38	13.75	21.61	23	0.80	1.03	78.25	44.50
NYS	IBM		IBM	89.75	89.63	-0.13	-0.14		4.84	5.40	128.13	83.50
NYS	Silicon Graphics		SGI	27.75	21.25	-6.50	-23.42	32	0.00	0.00	29.75	13.25
OTC	Sun Microsystems		SUNW	32.38	32.50	0.13	0.39	17	0.00	0.00	38.63	20.75
NYS	Xerox		XRX	79.25	75.25	-4.00	-5.05	19	3.00	3.99	82.25	51.50
NYS	Tandy		TAN	30.00	29.75	-0.25	-0.83	13	0.60	2.02	36.50	23.38
	CPUs											
NYS	Advanced Micro Device		AMD	19.38	17.88	-1.50	-7.74	12	0.00	0.00	21.50	8.38
OTC	Intel	(H)	INTC	67.13	64.00	-3.13	-4.66	16	0.00	0.00	68.75	38.50
NYS	LSI Logic		LSI	9.25	8.00	-1.25	-13.51	42	0.00	0.00	12.50	6.50
OTC	MIPS		MIPS	11.13	13.00	1.88	16.85		0.00	0.00	20.88	7.88
NYS	Motorola	(H)	MOT	81.00	75.38	-5.63	-6.94	22	0.76	1.01	82.50	54.00
	COMMUNICATIONS											
NYS	AT&T		T	38.63	38.25	-0.38	-0.97	98	1.32	3.45	41.38	32.50
NYS	BellSouth Corp.	(L)	BLS	48.38	45.38	-3.00	-6.20	15	2.76	6.08	54.13	45.00
OTC	MCI	(H)	MCIC	33.63	32.75	-0.88	-2.60	16	0.10	0.31	36.13	24.63
NYS	Northern Telecom	(H)	NT	48.75	46.13	-2.63	-5.38	23	0.32	0.69	49.25	29.88
NYS	Pacific Telesis		PAC	41.00	38.75	-2.25	-5.49	15	2.12	5.47	45.00	38.50

NOTE: SILICON GRAPHICS COMPLETED A 2-FOR-1 STOCK SPLIT
KEY: NYS=NEW YORK • ASE=AMERICAN • OTC=OVER THE COUNTER • (H)=NEW HIGH REACHED IN PERIOD • (L)=NEW LOW REACHED IN PERIOD • (s)=STOCK SPLIT

MARKET DIARY:

		MOST ACTIVE ISSUES:		
ADVANCES	9	LARGEST DOLLAR GAINER	Hewlett-Packard	$13.75
DECLINES	23	LARGEST DOLLAR LOSER	Silicon Graphics	$-6.50
UNCHANGED	1			
NEW HIGHS	7	LARGEST PERCENTAGE GAINER	Hewlett-Packard	21.61%
NEW LOWS	3	LARGEST PERCENTAGE LOSER	Silicon Graphics	-23.42 %

CLOSING QUOTES FOR CHART:

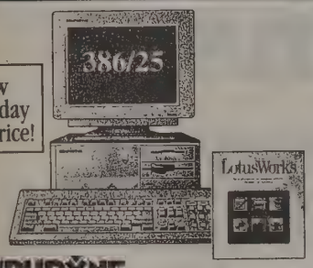
	CLOSE 02/14/92	CLOSE 03/13/92	NET CHANGE IN MONTH	PERCENT CHANGE IN MONTH
MICROTIMES STOCK INDEX	3984.10	3888.19	-95.91	-2.41
DOW JONES INDUSTRIAL AVERAGE	3245.97	3235.91	-10.06	-0.31
STANDARD & POOR'S 500 STOCK INDEX	412.48	405.84	-6.64	-1.61
N.Y.S.E. COMPOSITE	228.16	224.30	-3.86	-1.69
NASDAQ COMPOSITE	636.43	618.62	-17.81	-2.80

DATE	MICRO TIMES	DOW JONES
08/02/91	3132.83	3006.26
08/29/91	3265.70	3049.64
09/27/91	3216.77	3006.04
10/25/91	3223.68	3004.92
12/12/91	3254.85	2895.13
01/20/92	3961.41	3254.03
02/14/92	3984.10	3245.97
03/13/92	3888.19	3235.91

© 1991 Copyright Nordby International, Inc. Boulder, CO. THIS INFORMATION IS BASED ON SOURCES BELIEVED TO BE RELIABLE, AND WHILE EXTENSIVE EFFORTS ARE MADE TO ASSURE ITS ACCURACY, NO GUARANTEES CAN BE MADE. NORBY INTERNATIONAL AND MICROTIMES ASSUME NO LIABILITY FOR ANY INACCURACIES. CUSTOMIZED REPORTS FOR ANY INDUSTRY OR REGION ARE AVAILABLE UPON REQUEST FROM NORBY INTERNATIONAL (303) 449-0362.

High Tech! Low Price!

Over 5000 products at super low prices, everyday!



New Everyday Low Price!

COMPUDYNE

25/386 Computer
- 25 MHz 386 • 4 MB RAM • 80 MB Hard Drive
- Dual Floppy Drives
- Super VGA Monitor
- Lotus Works
- MS-DOS 5.0

#979873

1499.99

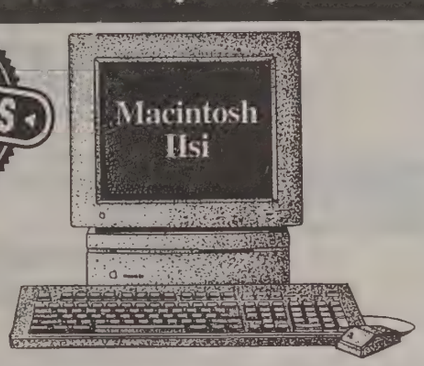
Business Leasing as low as $56/mo.*

PACKARD BELL

Force 486SX Computer
- 20 MHz 486SX • 4 MB RAM • 8 KB Cache
- 105 MB HD • Dual FDs • Built-in Modem
- Extended VGA Video Controller • Windows 3.1
- Lotus 1-2-3 • Prodigy
- Lotus Write
- Lotus SmartPics
- MS-DOS 5.0

#943402 (Monitor sold separately.)

1694.99



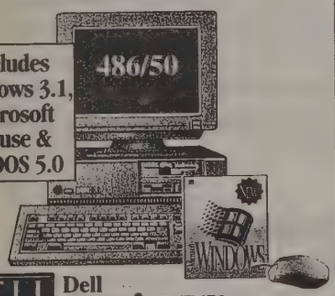
Authorized Dealer

Apple® Macintosh® IIsi System 3/40

This lowest cost Mac® II system is expandable and System 7.0 capable. Built-in cache for increased performance.
- 3 MB RAM • 40 MB HD
- Extended keyboard. #900074 (Monitor sold separately.)

Apple, the Apple logo, Mac and Macintosh are registered trademarks of Apple Computer, Inc

1974.98



DELL

Dell System® 486P/50
- 50 MHz i486 • 4 MB RAM • 230 MB HD
- Dual FDs • Super VGA Non-Interlaced Color Monitor • One year on-site service • Award winning support #997492

$2999

Business Leasing as low as $111/mo.*

Authorized Dealer

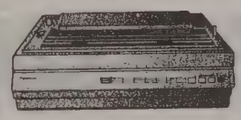
Apple® Macintosh® PowerBook™ 140 Notebook 4/40

Macintosh power with notebook convenience. All-in-one design with built-in networking. System 7 capable.
- 4 MB RAM
- 40 MB HD
- Integrated trackball
- 6.8 lbs #901453

2599.99

Business Leasing as low as $96/mo.*

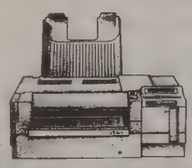
Apple, the Apple logo and Macintosh are registered trademarks of Apple Computer, Inc. PowerBook is a trademark of Apple Computer, Inc.



Panasonic Office Automation

KX-P1124i Printer 16 character status LCD front panel makes setup easier than ever. 24-pin, 80-col., 300/80 cps, 8 fonts. #450345

281.98



EPSON

Action Laser II

Welcome to the world of affordable laser printing! Get exceptional print quality, 6 ppm output and 300 x 300 dpi for a super price. User-friendly controls. #421083

699.99

Epson is a registered trademark of the Seiko Epson corporation

HEWLETT PACKARD

HP 95LX Palmtop Computer
- XT-compatible • 512 KB RAM
- 5.37 MHz • 11 oz.
- Lotus 1-2-3
- MS-DOS 3.22 #450403

389.99*

*Price after mfr. rebate.

PC Computing BEST SELLING SOFTWARE TITLES

Utilities	Mfg. Sug. Price	Our Price
MS-DOS 5.0 Upgrade	99.99	49.99
Microsoft Windows 3.1	149.99	89.99
AfterDark/Windows 2.0	49.99	29.99
QEMM 386 6.0	99.95	60.98
Procomm Plus 2.0	199.00	62.98
DR DOS 6.0	99.00	67.98
Norton Utilities Adv. 6.01	179.00	119.98
Stacker 2.0	149.00	87.99
Norton pcAnywhere 4.5	179.00	129.99
PC Tools 7.1	179.00	109.99

New Everyday Low Price!

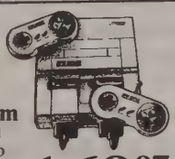
DELL

Dell System® 320N+ Notebook with 80 MB Hard Drive

Powerful enough for the most demanding applications, yet fits in your briefcase. Includes one year on-site service contract. • 20 MHz i386SX • 4 MB RAM • 80 MB HD • 1.44 MB FD •3-4 hrs. battery life • 6.8 lbs. #913630

$2799

Business Leasing as low as $104/mo.*

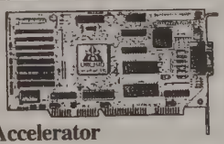


Nintendo

Super Nintendo Entertainment System

Includes everything you need to play. Features digital stereo sound and custom 16-bit picture processing for fabulous graphics and Super 3-D effects. #407001

169.97



ORCHID

Fahrenheit 1280 Windows Accelerator

Speeds up software an average of 10 times more than regular SVGA cards. 1280 x 1024 resolution, over 32 K colors. #756413

341.98

Super Corporate Support!

- Dedicated sales representatives are assigned to your account.
- Same-day shipping on most orders called in before 2 p.m! Next day shipping after 2.
- Use the convenient corporate pick-up window and avoid standing in lines!
- Same-day system configuration. Includes one-year tech support and parts/labor warranty.
- Fully authorized expert in-store service department open during all store hours, including evenings and weekends.
- CompCare℠ on-site service covers your system, printer and most peripherals for one low fee! Custom plans also available.
- Government Sales Division with GSA Schedule and toll-free Hotline.

San Bruno
1250 El Camino Real
San Bruno Towne Center, 1 blk N of Tanforan Mall, exit N off the 380 Fwy.
Retail Store (415) 244-9990
Corporate Sales (415) 244-9980

COMPUSA

THE COMPUTER SUPERSTORE℠

San Francisco Area Store Hours: Mon-Fri 9am-9pm, Sat 9am-7pm, Sun 11am-6pm

Call the Government Hotline (800) 468-4682†
Ask for your copy of our GSA Schedule.

Santa Clara
3561 El Camino Real
Lawrence Square Shopping Center at the Lawrence Expressway
Retail Store (408) 554-1733
Corporate Sales (408) 554-9772

We reserve the right to limit quantities on all products. Subject to price change and availability. *Leasing available through Leasing Group, Inc. Prices based on 36-month open end lease. †Apple® products are not available via mail or telephone orders.

Modern Customer Service & Tax Instructions To Politicians

BY JIM WARREN

This column concerns what isn't but could be—as soon as we do it.

FROM CALIFORNIANS WITH FERVOR: TAX-USE INSTRUCTIONS TO POLITICIANS

Earlier this year, Realizable Fantasies included a form that taxpayers could use to instruct their federal representatives about how *taxpayers* want their taxes used and requesting that information for computerized summary and online publication. Various readers of California-based *MicroTimes* asked for a similar version for our state—with interest increasing as the Ides of April approach.

REALIZABLE FANTASIES

(Did *you* know how your state allocates funds? I didn't.) And now, back to techno-chatter:

CONTACTING THOUSANDS OF QUALIFIED CUSTOMERS

Copyright © 1992 by Jim Warren, 345 Swett Rd., Woodside, CA 94062. All rights reserved. *Jim Warren founded* InfoWorld, *the DataCast proposal for paperless electronic newspapers, Wireless Digital, Initiative, Inc., and one of the nation's largest public microcomputer conventions. He was founding host of PBS's* Computer Chronicles, *founding editor of* Dr. Dobb's Journal, *and has chaired various computer trade and professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics.*

He organized and chaired the 1991 First Conference on Computers, Freedom & Privacy, sponsored by a dozen nonprofit and industry organizations, and is a member of the board of directors of Autodesk, Inc.

Obsolete technology: Horse-'n'-carriage computer companies *only* handle customer queries and technical support via telephones and snailmail (paper mail)—though some are nice enough to provide toll-free telephonic waiting rooms. Therein, you obediently await the company's convenience, often subjected to unwanted product pitches and distracting Muzak—sometimes even when you're paying for the call.

More considerate companies permit you to leave your number, perhaps after a short wait. Then you and they play phone-tag during the following days and weeks. Who knows—by the time they catch up with you, you might still remember why you once wanted to be their customer.

More modern companies also offer customers *online* access. Itty-bitty teeny-weeny companies only do it via local in-house bulletin board systems (BBS), using spare personal computers—they may even have more than one phone line. You pay for the call, or they might be connected to the international Fidonet, and you might find local access to that bumpy-but-free net via a local bulletin board system (see back pages of any *MicroTimes*). Fidonet is a cooperative anarchy, without a manager, that connects tens of thousands of BBSes. It's often faster than snailmail.

Other companies require that you contribute to the profits of high-priced spreads such as Compu$erve or Plodigy, etc., where you can wade through their answers to queries from multitudes of other customers. And they usually get a kickback, uh, commission from your visits to their forums in those platinum-priced commercial online services. Thus (as always) you pay for your customer support. Of course, companies charging for support always reduce the purchase price of their products, since they don't build support costs into their initial product price. Uh huh.

REAL COMPANIES OFFER REAL SERVICE

It's time for most companies to do what the best ones do: *Modern* service-oriented companies accept electronic mail from you via the global computer matrix, often called the Internet. You can access the Internet through numerous low-cost online service companies. Many offer access to email—and much, much more—for about $20/month, often via a local phone call, sometimes at 9600 baud. Examples include The WELL (415/332-4335), Netcom (408/554-8649), or Portal (408/973-9111), all of which offer nationwide access (free or toll).

The Internet—another leaderless co-op anarchy—is a network composed of about five thousand interconnected computer networks. It serves fifteen to twenty million users or more—dwarfing the size of the expensive, limited commercial services. And the number of users is escalating at a rate much faster than the explosion of personal computers since the mid-'70s.

EMAIL: GREAT FOR CUSTOMERS; CHEAP FOR COMPANIES

Electronic mail is informal, practical, and *fast.* It can arrive in less time than you would wait on hold. No phone tag; no envelope; no

Let's ask computer makers to offer compatible keyboards that exactly match those of their competitors—just as though they were trying to serve their customers. Various "standard" versions could include locations for the Mac's command and option keys.

Computerland of Serramonte

Bring in this ad to receive these prices

APRIL MADNESS

Cash Discount Available for selected products

MACINTOSH Authorized Dealer

Mac Classic II, 2MB RAM, 40MB HD	$1,099
Mac Classic II, 4MB RAM, 40MB HD	$1,239
Mac Classic II, 4MB RAM, 80MB HD	$1,364
Mac LC II, 4 MB RAM, 40 MB HD	$1,399
Mac LC II, 4MB RAM, 80MB HD	$1,530
Mac IISI, 3 RAM, 40 MB HD	$1,979
Mac IISI, 5 RAM, 80 MB HD	$2,375
Mac IICI, 5 RAM, 1 FLOPPY	$2,613
Mac IICI, 5 RAM, 80 MB HD	$3,168
Mac IIFX, 4 RAM, 1 FLOPPY	$3,861
Mac IIFX, 4 RAM, 80 MB HD	$4,391
Mac IIFX, 4 RAM, 160 MB HD	$4,845
Mac Quadra 700, 1 Floppy	$4,315
Mac Quadra 700, 80MB HD	$4,845
Mac Quadra 700, 160MB HD	$5,299
Mac Quadra 900, all configurations	CALL
PowerBook 100, with Floppy	$1,978
PowerBook 140, 2 RAM, 20MB HD	$2,067
PowerBook 140, 2 RAM, 40MB HD	$2,315
PowerBook 140, 4 RAM, 40MB HD	$2,563
PowerBook 170	STOCK

PRINTERS FOR MACINTOSH

H-P DeskWriter Printer	$389
H-P DeskWriter C color printer	$714
H-P LaserJet IIIP, Postscript Level II	$1,628
H-P LaserJet III, Postscript Level II	$2,215
Apple StyleWriter Printer	$330
Personal LaserWriter LS	$899
Personal LaserWriter NTR	$1,657
LaserWriter IIf	$2,725
LaserWriter IIg	$3,482

RADIUS

Pivot Monitor for MAC II SI or CI	$689
Color Pivot Display	$1,255
Two Page Monitor, & Mac II Interface	$1,251
Radius Rocket Accelerator for Mac II	$1,630

COMPAQ

DeskPro 386/25M, 1 floppy	$2,271
DeskPro 386/25M, 60MB HD	$2,533
DeskPro 386/25M, 120MB HD	$2,795
DeskPro 486S/16M, 1 floppy	$2,183
DeskPro 486S/16M, 60MB HD	$2,445
DeskPro 486S/16M, 120MB HD	$2,707
DeskPro 486S/25M, 1 Floppy	$2,707
DeskPro 486S/25M, 60MB HD	$2,970
DeskPro 486S/25M, 120MB HD	$3,232
DeskPro 486/33M, 1 Floppy	$3,232
DeskPro 486/33M, 120MB	$3,756
DeskPro 486/33M, 340MB	$4,804

COMPAQ LAPTOPS

LTE Lite/20, 2MB, 40MB HD	$2,533
LTE Lite/20, 2MB, 60MB HD	$2,795
LTE Lite/20, 2MB, 84MB HD	$3,144
LTE Lite/25, 4MB, 60MB HD	$3,232
LTE Lite/25, 4MB, 84MB HD	$3,669
LTE 386S/20, 2MB, 30MB HD	$2,882
LTE 386S/20, 2MB, 60MB HD	$3,144

DEMO & CLOSEOUTS

Limited Quantities

Compaq DeskPro 286
IBM PS/1 286, 30MB HD
Toshiba T3100SX Laptop
NEC SilentWriter 2 Model 990
IBM Personal Page Printer II
NEC P5300 Printer
IBM 8508 Mono Monitor
IBM 8513 Color Monitor

IBM

Model 35SX, 40MB HD, VGA Monitor	$1,718
Model 35SX, 80MB HD, VGA Monitor	$1,918
IBM Model 40SX, 40 MB HD	$1,748
IBM Model 40SX, 80 MB HD	$1,955
IBM Model 55SX, 40 MB HD	$1,783
IBM Model 55SX, 80 MB HD	$1,989
IBM Model 57SX, 80 MB HD	$2,653
IBM Model 57SX, 160 MB HD	$3,065
IBM Model 70-081, 80MB MB	$2,401
IBM Model 70-161,160MB HD	$2,802
IBM Model 70-A16, 160 MB HD	$3,750

Business Partner

Authorized Advanced Products Dealer

NEW NOTEBOOK!

Model N51SX, 2MB RAM, 40MB HD	$1,934

IBM/LEXMARK PRINTERS

Personal Printer Series II model 2380	$325
Personal Printer Series II model 2381	$456
Personal Printer Series II model 2390	$325
Personal Printer Series II model 2391	$456
IBM Laserprinter E	$993
IBM Laserprinter 4019	$1,363
IBM LaserPrinter 4029 Model 5E	$1,077
IBM LaserPrinter 4029 Model 6	$1,367
IBM LaserPrinter 4029 Model 10	$1,645
IBM LaserPrinter 4029 Model 10L	$2,126

NEC

PowerMate SX/16i, 1 Floppy	$827
PowerMate SX/16i, 45MB HD	$1,034
PowerMate SX/20vi, 1 Floppy	$951
PowerMate SX/20vi, 45MB HD	$1,158
PowerMate 386/33i, 1 Floppy	$1,904
PowerMate 386/33i, 60MB HD	$2,152
PowrMate 386/33i, 120MB HD	$2,318
Ultralite SX/20 Notebook, 40MB HD	$2,391
Ultralite SX/20 Notebook, 60MB HD	$2,541
NEC P6200 Printer	$413
NEC P6300 Printer	$628

NEW LASERPRINTER!

NEC SilentWriter Model 95	$1,467

SCANNERS

Apple OneScanner, 256 Greyscale	$983
Hewlett-Packard ScanJet IIC for IBM	$1,432
Hewlett-Packard ScanJet IIC for Mac	$1,299
MicroTek 600Z for IBM, 24 Bit	$1,353
MicroTek 600ZS for Mac, 24 Bit	$1,353

NOVELL

Complete System Design
Maintenance, Installation
& Training
Ask for Network Manager
415-756-0101

TEXAS INSTRUMENTS

CALL ON PRICING

TOSHIBA

Toshiba T2000SX, 60MB HD	$2,131
Toshiba T2000SXE, 60MB HD	$2,633
Toshiba T2200SX, 60MB HD	$2,553
Toshiba T2200SX, 80MB HD	$2,792
Toshiba T3300SL, 80MB HD	$3,191
Toshiba T3300SL, 120MB HD	$3,590
T4400SX, 486SX/25MHZ, LCD	$4,468
T4400SX, 486SX/25MHZ, Gas Plasma	$4,707
Toshiba T5200, 100 MB HD	$3,180
Toshiba T5200C, Color 200 MB HD	$6,064

HEWLETT-PACKARD

H-P DeskJet 500	CALL
DeskJet 500C, Color Printer, 300DPI	$714
H-P LaserJet IIP Plus	$799
H-P LaserJet IIP,Postscript,1 5MB	$1,391
H-P LaserJet IIIP, 1MB RAM	CALL
H-P LaserJet IIIP, Postscript Level II	$1,628
H-P LaserJet III	$1,529
H-P LaserJet III, Postscript Level II	$2,215
H-P LaserJet IIID	$2,345

EPSON

Epson AP 3250	$221
Epson LQ-570	$269
Epson LQ-870	$453
Epson LQ-860	$574
Epson LQ-1070	$398
Epson LQ-1170	$621
Epson FX-850	$303
Epson FX-1050	$412
Epson LQ-2550	$916
ActionLaser II, 6 page per min , 512K	$683
EPL 8000, LaserPrinter	$1,375
EPL 7500, Laser, PostScript, 2MB	$1,982

OKIDATA

Okidata ML 320	$308
Okidata ML 321	$431
Okidata ML 380	$216
Okidata ML 390 Plus	$431
Okidata ML 391 Plus	$586
OkiLaser 400	$617
OkiLaser 800, 8 PPM, 512K	$926
OkiLaser 820, 8 PPM, scaleable fonts	$1,235
OkiLaser 830, 8 PPM, Postsript, 2MB	$1,305
OkiLaser 840, 8 PPM, Postscript	$1,605

Computerland of Serramonte
4941 Junipero Serra Blvd.
Colma, CA 94014
(415) 994-1401

VTT Computers

Tel: 415/348-3951 Fax: 415/348-3953
220 East 3rd Ave. Suite #14, San Mateo, CA 94401
Open M-F 9-6:00, Sat. & Sun. 11-6. Evenings by appointment.

5 Year Warranty!

Guarantee to Beat Any Price

Complete System VTT433
- 80486/33Mhz
- 64K SRAM cache exp. to 256K
- 14" VGA color monitor
- 1MB RAM exp. to 32MB
- TEAC 1.2 or 1.44 floppy drive
- 16 bit VGA card
- 8 expansion slots
- 101 enhanced keyboard
- 1P/2S/1G I/O cards
- Mini-tower or enhanced AT case
- IDE 2 Hard drive/2 floppy drive controller

$989

Complete System VTT450
- 80486-50MHz
- 64K SRAM cache exp. to 256K
- 14" VGA color monitor
- 1MB RAM exp. to 32MB
- TEAC 1.2 or 1.44 floppy drive
- 16 bit VGA card
- 8 expansion slots
- 101 enhanced keyboard
- 1P/2S/1G I/O cards
- Mini-tower or enhanced AT case
- IDE 2 Hard drive/2 floppy drive controller

$1299

- Free 1 year parts warranty extendable to 5 years
- Life-time labor warranty
- Customized systems
- Brand-name motherboards
- On-site service
- Technical support
- Networking consulting
- Evening appointments
- One month money back guarantee
- EISA configuration, available
- Service contracts

VISA/MC
Prices are subject to change without notice.
(cash prices)

Complete System VTT333
- 80386/33Mhz
- 64K SRAM cache exp. to 256K
- 14" VGA color monitor
- 1MB RAM exp. to 32MB
- TEAC 1.2 or 1.44 floppy drive
- 16 bit VGA card
- 8 expansion slots
- 101 enhanced keyboard
- 1P/2S/1G I/O cards
- Mini-tower or enhanced AT case
- IDE 2 Hard drive/2 floppy drive controller

$719

Complete System VTT316sx
- 80386sx/16Mhz
- 14" VGA color monitor
- 1MB RAM exp. to 32MB
- TEAC 1.2 or 1.44 floppy drive
- 16 bit VGA card
- 8 expansion slots
- 101 enhanced keyboard
- 1P/2S/1G I/O cards
- Mini-tower or enhanced AT case
- IDE 2 Hard drive/2 floppy drive controller

$599

Hard Drives:
40MB $192
80MB $295
100MB $315
120MB $359
210MB $579

Monitors/Video Cards:
14" SVGA .28 dot $279
Nanao 16" 9070U $879
NEC/Sony/ViewSonic ..... Call
SVGA card w/512K $59
SVGA card w/1M $79
Orchid Pro II/S 1M $169
Orchid Fahrenheit $285

Printers:
HP IIP $785
HP IIIP $1099
HP III $1489
DeskJet 500C $689
Oki Laser 400 ..... $615
Oki Laser 800 ..... $925
Oki Laser 830 ..... $1289

Miscellaneous:
1MB RAM 70ns $45
1.2 or 1.44MB Teac $59
101 Enh. KB/Maxi $28/35
IDE CNTR w/1p, 2s, 1g $25
2400 baud modem $49
Fax/modem 96/24 ..... $79
Win. 3.0 w/Logitech Mouse $59

3 Button Mouse $19
Colorado tape bk-up 120/250 ..... $199/265

Laptops:
Toshiba, Everex, Sharp, AST ..... Call for details

NEWS & VIEWS

paper; no stamp; no U.S. Snail Service. It can be sent at any time of the day or night, avoiding time-zone and weekend problems. Questions and comments can be drafted offline, carefully and completely, often including examples, and you never need a printer.

Often, the (service-oriented) company can quickly customize a reply, cutting and pasting from prefab explanations, often including examples—a much more efficient use of customer support staff. Responses to multi-part queries can be inserted into your original questions, item by item; no retyping of your queries or comments, since they arrived in machine-readable form. If you require expertise beyond that of the person processing your email, they have the time and net connections to easily seek answers from a qualified guru; no pressure to guess. Even if the guru is in another building, state, or nation.

It's trivial to copy suggestions or questions illustrating problems worth mentioning to a manager or programmer/engineer, to those who should see them. No illegible notes; no inaccurate summaries of comments during frantic or furious phone calls.

Suggestion: Clip this and send copies to the Customer Service Manager of every computer company you have to telephone. And check *your* organization: Is it obsolete—or does it accept Internet email from potential and current clients?

KOMPATIBLE KEYBOARDS

Lots of folks work on multiple computers. Most become "multi-digital"—that's the fingertip counterpart of multilingual—where they force their hands to learn the numerous subtle, error-producing differences between alien keyboards. Not just different key placement, but tiny changes in horizontal and vertical placement, differently shaped keys—all carefully designed to infuriate the user. (Why does the Mac extended keyboard put the caps-lock key where Buddha intended the control key to be? Dumb!)

So let's ask computer makers to offer *compatible* keyboards that exactly match those of their competitors—just as though they were trying to serve their customers. Various "standard" versions could include locations for the Mac's command and option keys.

Delightfully, Key Tronic already does this for a Mac and PC. Even jazzier, some of their keyboards allow plug-in bar-code scanners, have on-board trackballs, and also offer an innovation worth special mention:

Key Tronic offers a "KeyMouse"—in any of several key-layout locations. Press down on it, and it's a normal key. Wiggle it in a 360-degree lateral direction, and it's a pointing device, a tiny joystick. *Neat* idea! (Key Tronic, Spokane WA, 800-262-6006)

Now, if they'd just offer a common standard of all the options on keyboards for PCs and Macs and SPARCs and Silicon Graphics and ...

SHARE INTELLECTUAL PROPERTY

Send your fantasies for realization to Realizable Fantasies, 345 Swett Rd., Woodside, CA 94062, or by email to *jwarren@well.sf.ca.us*. Published proposals will be attributed to their authors, unless anonymity is requested. ■

ENCY systems "AB$OLUTELY THE BEST..." ENCY systems

386-33/40C ISA

.80386DX-33 OR 40MHz CPU
.4MB 70 ns RAM EXPANDABLE TO 32MB
.64KB STATIC RAM CACHE
. AMI BIOS
.120 MB IDE HARD DRIVE
.1.44 & 1.2 MB FLOPPY DRIVES
.14" MICROPROCESSOR-BASE DIGITAL CONTROL MULTISCAN SVGA MONITOR WITH 1024X768 RELOLUTION AND .28DP
.16 BIT 1024X768 SVGA CARD WITH WINDOWS ACCELERARTOR (5 TO 10 TIMES FASTER THAN SVGA)
.101 ENHANCED KEYBOARD
.2 SERIAL PORTS
.1 PARALLEL, 1 GAME PORT
.2 8-BIT 6 16-BIT EXPANSION SLOTS
.SOCKET FOR WEITEK 3167 OR 80387 COMPATIBLE MATH COPROCESSOR
.DELUXE CASE WITH DIGITAL DISPLAY

$1375

W 120 MB HDD ,SVGA MONITOR & WINDOWS ACCELERATOR
.ADD $35 FOR 386DX-40C

486-33/50C ISA

.80486DX-33 OR 50 MHz CPU
.4MB 70 ns RAM EXPANDABLE TO 32MB
.256KB STATIC RAM CACHE
.AMI BIOS
.120 MB IDE HARD DRIVE
.1.44 & 1.2 MB FLOPPY DRIVES
.14" MICROPROCESSOR-BASE DIGITAL CONTROL MULTISCAN SVGA MONITOR WITH 1024X768 RELOLUTION AND .28DP
.16 BIT 1024X768 SVGA CARD WITH WINDOWS ACCELERATOR (5 TO 10 TIMES FASTER THAN SVAG)
.101 ENHANCED KEYBOARD
.2 SERIAL PORTS
.1 PARALLEL, 1 GAME PORT
.1 8-BIT 7 16-BIT EXPANSION SLOTS
.SOCKET FOR WEITEK 4167 MATH CO
.DELUXE CASE WITH DIGITAL DISPLAY

$1695

W 120 MB HDD, SVGA MONITOR & WINDOWS ACCELERATOR
ADD $350 FOR 486-DX-50C

486-33/50C EISA

.80486DX-33 OR 50 MHz CPU
.4MB 70 ns RAM EXPANDABLE TO 64MB
.256KB STATIC RAM CACHE
.AWARD BIOS
.200 MB SCSI HARD DRIVE WITH ULTRASTOR 24F EISA SCSI CONTROLLER
.1.44 & 1.2 MB FLOPPY DRIVES
.14" MICROPROCESSOR-BASE DIGITAL CONTROL MULTISCAN SVGA MONITOR WITH 1024X768 RELOLUTION AND .28DP
.16 BIT 1024X768 SVGA CARD WITH WINDOWS ACCELERATOR (5 TO 10 TIMES FASTER THAN SVGA)
.101 ENHANCED KEYBOARD
.2 SERIAL PORTS
.1 PARALLEL, 1 GAME PORT
.8 32-BIT EISA SLOTS
.SOCKET FOR WEITEK 4167 MATH CO
.DELUXE CASE WITH DIGITAL DISPLAY

$2995

W 200 MB HDD, SVGA MONITOR & WINDOWS ACCELERATOR
ADD 400 FOR 486DX-50EISA

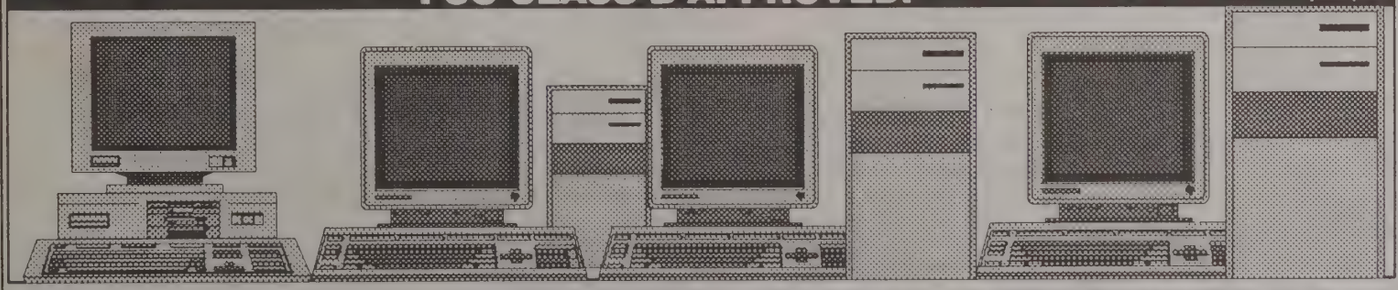
386-33/64K CACHE BARGAIN PLUS

.80386DX-33 CPU
.1 MB 70 ns RAM INSTALLED
.64KB STATIC RAM CACHE
.80 MB IDE HARD DRIVE
.1.2 OR 1.44 FLOPPY DRIVE
.14"SVGA MONITOR(1024X768)
.16 BIT SVGA CARD
.101 ENHANCED KEYBOARD
.2 SERAIL 1PARALLEL 1 GAME PORTS
.8 EXPANSION SLOTS
.SOCKET FOR WEITEK MATH CO
.DELUXE CASE WITH DIGITAL DISPLAY

$999

W 80 HDD, & SVGA MONITOR

FCC CLASS B APPROVED.



5 YEARS WARRANTY 30 DAYS GUARANTEE

5 YEARS LABOR,1YEAR PARTS WARRANTY
30 DAYS MONEY BACK GUARANTEE*
UNLIMITED FREE TECHNICAL SUPPORT
PRICES AND AVAILABILITIES SUBJECT TO CHANGE WITHOUT NOTICE
ALL SYSTEMS ARE COMPATIBLE TO DOS,OS2,UNIX AND NOVELL NETWARE
*ALL RETURNS MUST HAVE RMA# WITH 15% RESTOCKING FEE; SOFTWARE, SHIPPING&HANDLING ARE NOT REFUNDABLE

OPTIONS

ADD $40 FOR ADDITIONAL MEG MEMORY
ADD $115 FOR DOS,WINDOWS&MOUSE
CUSTOM CONFIGUARTION AVAILABLE, CALL FOR DETAILS

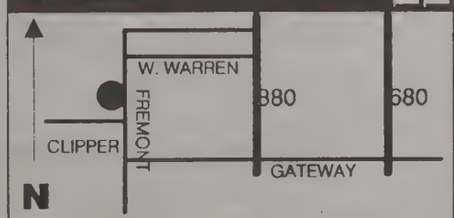
HOT LINE

ENCY systems **510-226-1848**

46743 FREMONT BLVD. FREMONT

STORE HOURS : MON-FRI 8:30 to 5:30, SAT&SUN 11:00 to 3:00
ALL TRADEMARKS BELONG TO THEIR RESPECTIVE COMPANIES

WHERE



INSTRUCTING CALIFORNIA POLITICIANS ABOUT USING OUR TAXES

[please copy, post, and circulate, *widely*]

Approaching tax-day emphasizes that, last year, we again worked much more than a third of the year for the government and politicians—and that's *without* accounting for our *less*-obvious taxes and costs for regulations. This year, let's tell them how *we* want them to use the hard-earned money that they take from us. When we send in our taxes, let's also *send copies of these* ***instructions-to-politicians*** *to our current and potential elected representatives, especially to this year's political candidates.* (Let's not blame the IRS or State Franchise Tax Board; they're just doing what our elected representatives tell them to do.)

Please feel free to copy this to friends, neighbors, customers, business associates, and company and community bulletin boards.

See the February, 1992, issue of *MicroTimes* for a copy of the *federal* tax-use form and *federal* budget for the 1992 fiscal year.

And so politicians can't bury the results: If enough people send a completed copy to me, I will compile and distribute or publish the results—with copies to appropriate media and officials (to the extent that I can cover data-entry and publication and distribution costs). Please at least include your ZIP code for locale identification.

If you include name and address (plus fax number and electronic-mail address, if available), I will send a copy of the results. Your personal information (if you list it) won't be disclosed, but I will summarize the number and percent of named respondents.

☐ Jim, I am sending some loot to help cover processing and publicity/distribution expenses. (After data-entry expenses, any/all remaining donations will be used for wider distribution and/or publication, possibly even including ads. My time/work is entirely pro bono. —JW)

-or-

☐ Jim, I want something for nothing. Process my data and give me the results, but I'm not willing to help pay any of your out-of-pocket expenses. (If *this* option is widely checked, then we will know what drives many of our tax-and-spend politicians, won't we?)

—Jim Warren, occasional "political irritant," 345 Swett Rd., Woodside, CA 94062; *fax!*(415)851-2814; *e-mail!*jwarren@well.sf.ca.us

[For identification purposes only: *MicroTimes* contributing editor & "futures" columnist; Autodesk, Inc., board of directors member; *InfoWorld* newspaper founder; PBS's *Computer Chronicles* founding host; *Dr. Dobb's Journal* founding editor; First Conference on Computers, Freedom & Privacy (1991) organizer and chair; Electronic Frontier Foundation 1992 Pioneer Award recipient; etc.]

Note: Perhaps this illustrates part of our fiscal problem—apparently no one asks about *current*-year expenses:

In seeking data on this fiscal year's adopted California budget, I had to talk to 14 staff—*fourteen!*—in the Governor's office, Treasurer's office, Controller's office, three legislators' offices, the Department of Finance, and the Legislative Analyst's office. Most of them promptly offered charts of what lawmakers *hope* to spend, *next* year; they had those details readily available. However, only the last two could figure out where *this* year's summary might be, and none could identify an authoritative published summary. When two faxed summaries, one was hand-written, the other was a page from a computer file, and both differed from FY1991–92 adopted-budget data sent only weeks earlier from another state senator's office. The most recent ones had different categories, differed by $200,000 in the same category, and only one mentioned $40,901,900,000 being spent from funds other than the General Fund.

To: _____

_____

_____

_____

CALIFORNIA TAX ALLOCATION INSTRUCTIONS FROM A VOTER

Here are the taxes that I *know* you are taking away from what I earned for my work last year. Here is how *I* want you to use them. (For those other projects that you or your campaign contributors desire, please depend on the hidden taxes that I cannot so easily identify.)

This is a *very serious matter to* me, even though this note is a form. *Please respond and tell me* how much of my earnings *you,* as my elected representative, want to take in taxes, and how much *you* want to spend in each budget area. Please send me _____ copies of your response for my friends, neighbors, and business associates. (And, a lack of response will be noted as a response.)

	How to use my taxes—:		**current state allocations:**		**Fiscal 1991–92 California Expenditures**
	percent	*dollars*	*percent*	*estimated exps.*	*[from Cal. Dept. of Finance "ch:estexp.100" 3/13/92]*
1.	%	$	23.4%	$ 19,803,200,000	K–12 Education
2.	%	$	12.3%	10,404,400,000	Higher Education
3.	%	$	40.8%	34,511,000,000	Health and Welfare
4.	%	$	4.2%	3,531,000,000	Youth & Adult Correctional
5.	%	$	7.3%	6,168,000,000	Business, Transportation & Housing
6.	%	$	3.3%	2,756,700,000	Resources/Environment
7.	%	$	8.8%	7,445,800,000	Legislative, Judicial, Executive & Other
8.	%	$	?%	*not listed*	*Interest & Debt Service*
9.	%	$	?%	*not listed*	*reduction of the state debt*
10.	%	$	?%	*not listed*	*tax reduction*/tax refund/tax rebate to me
my tax:	100.0%	$	100.0%	$ 84,620,100,000	total from General Fund & other state funds

Thanking you for your attention to this *constituent request. Watching for your reply,* I remain,

From: _____

_____

_____

_____ ZIP: _____

HD COMPUTER

The Company You Can Count On!

Despite the recession, HD Computer continues to sell more systems. The reasons are simple: 1) Our systems are so reliable that repeat customers are many 2) The prices we offer mean more value 3) Our volume purchasing translates to greater savings to our customers.

486-33MHz 256K Cache $2195
486-50MHz 256K Cache $2695

- 4MB RAM Expandable to 32MB onboard
- 200MB 15ms Hard Drive
- 1.2MB 5 1/4" Floppy Drive
- 1.44MB 3 1/2" Floppy Drive
- 1:1 Interleaved 2FD/2HD Controller
- 2 Serial, 1 Parallel and 1 Game Ports
- 14" Non-Interlaced Super VGA Monitor (1024x768) .28 dot pitch
- 1MB 16bit SVGA Card
- 101 Key-enhanced Keyboard
- Vertical Case with 250W Power Supply
- Built-in Math Coprocessor
- Clock/Calendar with Battery Backup
- Socket for Weitek Math Coprocessor
- 8 Expansion Slots
- 3 Button High Resolution Serial Mouse
- MS DOS v5.0
- MS Windows v3.0

OPTIONS TO BASE CONFIGURATION:

- 80MB Hard Disk Less $300
- 130MB Hard Disk Less $200
- 340MB Hard Disk Add $400
- 64K Cache Less $50
- VIEWSONIC 6 - Add $30
- RAM - Add $50/MEG
- TSENG VGA CARD - Add $90
- ORCHID HS - Add $90
- SPEEDSTAR - Add $90

To Order Call:

Sunnyvale:(408) 720-0493
Sacramento: (916) 483-4278
El Cerrito: (510) 528-0753

HD COMPUTER

Risk Free With HD!

With our 2–year warranty on labor and 1–year guarantee on parts, there is no risk to you. Should any part fail, a replacement will be shipped at no cost. To top it all, we have a 30–day money back return policy which we will refund the entire cost of purchase. Shipping and handling charges are not refundable. Now is the time to own a computer – risk free with HD!

486sx–20MHz 64K Cache $1745

- 4MB RAM Expandable to 32MB onboard
- 130MB 16ms Maxtor Hard Drive
- 1.2MB 5 1/4" Floppy Drive
- 1.44MB 3 1/2" Floppy Drive
- 1:1 Interleaved 2FL/2HD Controller
- 2 Serial, 1 Parallel and 1 Game Ports
- 14" Non–Interlaced Super VGA Monitor (1024x768) .28 dot pitch
- 1MB 16 bit SVGA Card
- 101 Key–enhanced Keyboard
- Vertical Case with Power Supply
- 8 Expansion Slots
- 3 Button High Resolution Serial Mouse
- Socket for Weitek Coprocessor
- Clock/Calendar w/Battery Backup
- MS DOS v5.0
- MS Windows v3.0

OPTIONS TO BASE CONFIGURATION:

- 80MB Hard Disk $ 1645
- 200MB Hard Disk $ 1945
- 256K Cache $ 1845

Sunnyvale: (408) 720–0493
Sacramento: (916) 483–4278
El Cerrito: (510) 528–0753

Business Hours:
Mon – Fri 9:00 to 6:00
Sat 10:00 to 4:00
Sun 10:00 to 4:00 (Sunnyvale Only)

HD COMPUTER

"definitely not another 'run of the mill' machine"
"more experienced users searching for top performance might want to consider HD Computers..." *Computer Shopper Magazine June 1991, Pg. 246*

HD: GOOD SYSTEM, GOOD PRICE

Computer Shopper Magazine November 1991, Pg. 181

386-33MHz 64K Cache	$1595
386-40MHz 64K Cache	$1595

- 4MB RAM Expandable to 32MB onboard
- 120MB 28ms Hard Drive
- 1.2MB 5 1/4" Floppy Drive
- 1.44MB 3 1/2" Floppy Drive
- 1:1 Interleaved Controller
- 2 Serial, 1 Parallel and 1 Game Ports
- 1MB 16bit SVGA Card
- 14" Non-Interlaced SVGA Monitor (1024x768, .28mm dot pitch)
- 101 Key-enhanced Keyboard
- 8 Expansion Slots
- Mini Vertical or Desktop Case with Power Supply
- 387 Coprocessor Socket Supports Intel Weitek, Cyrix and IIT Coprocessors
- Clock/Calendar with Battery Backup
- 3 Button High Resolution Mouse
- MS DOS v5.0
- MS Windows v3.0

OPTIONS TO BASE CONFIGURATION:

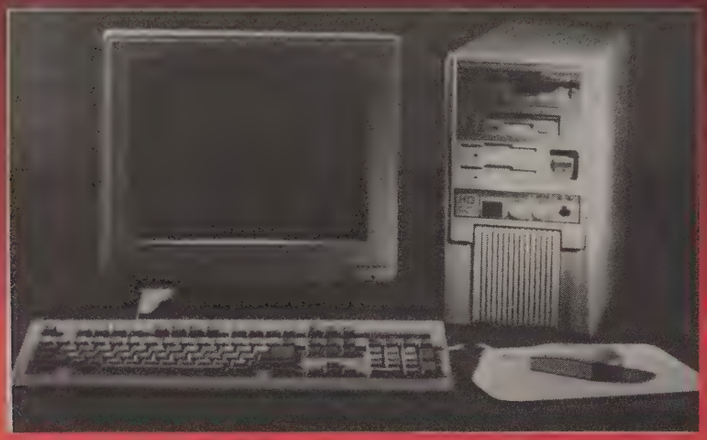
- 120MB Hard Disk - Add $50
- 200MB Hard Disk Add $250
- Vertical Case - Add $50
- VIEWSONIC 6 - Add $30

Sunnyvale: (408) 720-0493
Sacramento: (916) 483-4278
El Cerrito: (510) 528-0753

FREE DELIVERY & 1 YEAR ON-SITE SERVICE
(Within 408 & 510 Area Codes Only)

HD COMPUTER

Ensure you win! Risk free! Performance, Compatibility, Reliability, Quality, Service, Lifetime Technical Support, Value. All major credit cards. No surcharge for VISA, MasterCard and Discover Card orders. Qualified PO's accepted from Academic, Corporate and Public Institutions. International orders.



386SX-20 NOTEBOOK $1695

* 2MB RAM Expandable to 6MB onboard
* 1.44MB Floppy Drive
* 40MB (25ms) IDE Hard Drive
* 640x480 VGA LCD Gray Shades Display
* MS DOS v5.0
* RAM Add $100/MB
* 60MB Hard Disk Add $100

386SX-25MHz	$ 695
386SX-20Mhz	$ 650
386SX-16MHz	$ 595
386-25MHz	$ 795
286-16MHz	$ 550

* 1MB RAM Expandable to 8MB onboard
* 40MB IDE Hard Drive
* 1.2MB or 1.44MB Floppy Drive
* 1:1 Interleaved Controller
* 2 Serial, 1 Parallel and 1 Game Ports
* 101 Key enhanced Keyboard
* Mini Vertical or Desktop Case with Power Supply
* 3 Button High Resolution Serial Mouse
* Socket for Math Coprocessor
* Clock/Calendar w/Battery Backup
* MS DOS v5.0

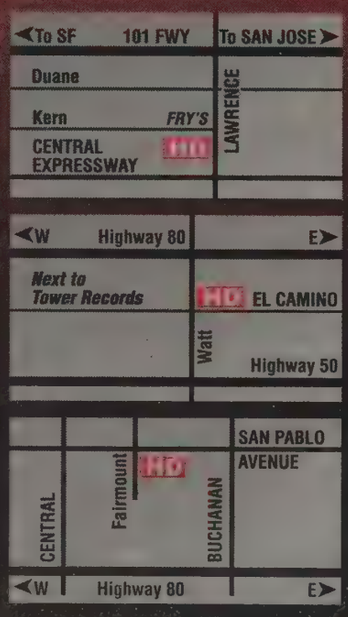
OPTIONS TO BASE CONFIGURATION:

* 80MB Hard Disk Add $100
* 120MB Hard Disk Add $200
* 200MB Hard Disk Add $400
* Second Floppy Drive Add $60
* Memory Upgrade $50/MB
* Windows v3.0 $45
* 12" Amber Monitor with Card $95
* 14" VGA Monitor + 16 bit VGA Card $295
* 14" SVGA Monitor + 1MB SVGA Card $395
* 14" Non-interlaced Monitor + 1MB SVGA Card $445

BUSINESS HOURS (PACIFIC):
MON-FRI 9:00 TO 6:00; SAT & SUN 10:00 TO 4:00

MONTHLY SPECIALS

1) IDE Cache Controller w/1MB RAM Expandable to 16 MB. Reduces IDE Hard Disk Access to 0.3 ms without reformatting drive! $295
2) Intel 387DX Math Coprocessor
   25MHz — $159
   33MHz — $195
3) 2400 Baud Internal Modem $49
4) 9600/2400 Baud Fax/Modem (Send & Receive) $99
%) Microsoft Compatible Hi-res Serial Mouse (290 CPI) $19
6) 3.5" 1.44MB Panasonic Floppy Drive (White Panel) $49



CORPORATE OFFICE:

1196 Kern Avenue
Sunnyvale, CA 94086
(408) 720-0493
Fax: (408) 720-1967

SACRAMENTO:

2530 Watt Ave.
Sacramento, CA 95821
(916) 483-4278
Fax: (916) 483-4826

EL CERRITO:

10001 San Pablo Ave.
El Cerrito, CA 94530
(510) 528-0753
Fax: (510) 528-0757

The Online Campaign Trail

Why I'm Running For Congress

BY GLENN TENNEY

Progress begins with initiative, a coming together of a vision and the will to accomplish great things. Silicon Valley entrepreneurs know this very well.

For too long, career politicians have laid barriers in the way of people working to build a humane, viable future with the tools that technology has given them. When the people have asked for widespread access to telecommunications, computing power, and education, old-school politicians have pointed to the necessity of defense spending instead of making investments in the future.

That's why I'm announcing my candidacy for the US House of Representatives in the reapportioned twelfth Congressional District of California. My district covers most of the area from San Mateo up to Golden Gate Park in San Francisco. As a Democrat, I will be challenging our twelve-year incumbent in the June primary.

GUEST EDITORIAL

A few weeks ago I asked Congressman Tom Lantos' staff how he voted last year. Their initial response was to hand me the glossy advertising brochure that our tax dollars paid for. When pressed to find out how he voted, they ushered me into their library, showed me the *Congressional Record*, and told me to look it up myself day by day. This is how my representative, from one of the most technologically advanced districts, brings information to his constituents. Career politicians have remained dedicated to high defense spending while the real tools needed for worldwide economic competition are lying dormant. We need to encourage the young, trained minds of our country, and to provide the communications power to unleash that talent.

Every day we are faced with nontechnical problems such as health insurance, jobs, and our economy, but I feel very strongly that our country needs to look at the future of technology: how it can be used or abused, and how it is abusing all of us. Technology is advancing far faster than our laws can cope, which raises many legal, sociological, ethical, and constitutional questions. Answering those questions requires both an understanding of the technology and actual experiences with the technology.

Our greatest resources for the future are our children and our world. Our country needs to take a proactive role in producing the best educated future generation that we can, as well as having a place for that generation to live and be productive. We need to find innovative and creative ways to put the technology to work for our future rather than putting up legislative roadblocks to the future. Providing the information and education we and our children need to be competitive in the future is coupled to our economy. We can't be productive today, nor can our children compete in the future, without information and education. We must plan for the twenty-first century today.

We are faced with a society of economic haves and have-nots. Most of us actively involved with technology and information access know that information is power. We are fast becoming a nation of information "knows" and "know-nots," and those who do not have the information will be in an even more devastating position than those who are just economically disadvantaged. Our government itself works to keep information unavailable to us. We need to bring information to the people, and get information from the people to our elected officials. This will help bring the power back to the people. You can be an elected official without being a career politician, but you can't legislate technological issues unless you understand the technology. We need elected officials who are online and accessible, and with whom information flows—to them and from them, as a dialogue.

One of the problems of our political system is that it takes money to win. Too often these funds come from Political Action Committees. The traditional view has been that campaign funding is spent to "get the message out." The online community finally has a chance to use this medium to not only get a message out, but to discuss the issues without spending obscene amounts of money. Let's use my campaign as a demonstration of the power of online politics. Pass this on to your friends and colleagues, and around your town. Even though California's twelfth Congressional district covers a limited area, these issues need to be discussed online and in the media nationwide. We of the online community are currently an underrepresented constituency. Let's change that. Let's get Congress online. ■

The traditional view has been that campaign funding is spent to "get the message out." The online community finally has a chance to use this medium to not only get a message out, but to discuss the issues without spending obscene amounts of money.

San Mateo entrepreneur Glenn Tenney is the chairperson and organizer of the Hackers Conference; a member of the program and organizing committees of the First Conference on Computers, Freedom, and Privacy; and a participating member of the IEEE USA Intellectual Property Committee. He can be reached at (415)574-2931 (voice/fax), tenney@netcom.com (Internet), 70641,23 (CompuServe), and also on MCI and America Online.

The Ultimate Portable Note Taker

Info Select Is An Excellent Representative Of A Class Of Software That Helps You Store, Organize, And Find All The Various Notes You Collect Throughout The Day

BY ED KAHN

In the old days, my desk and pockets were cluttered with scraps of paper. I had notes, 3" x 5" cards, business cards, and all kinds of paper litter. Each night, I would gather as much of this mess as I could and add it to the piles already on my desk. Eventually, I would sort through these scraps of paper in the hopes of making some sense out of them. Some would be pasted into my notebook, others would wait on my desk to be examined again in the future. A few would make their way to the waste basket. I always thought there must be a better way to do this. There is and has been for some time.

Several years ago, MicroLogic introduced a program called Tornado Notes. It represented a new class of software that would allow you to enter this conglomerate of information into a computer program and then, miraculously, be able to find the information you needed. MicroLogic now offers Info Select, a new version of the older Tornado Notes. Once again, this is a wonderful addition to any computer, and since it requires relatively little space and is memory resident, it is particularly well suited for portable computers.

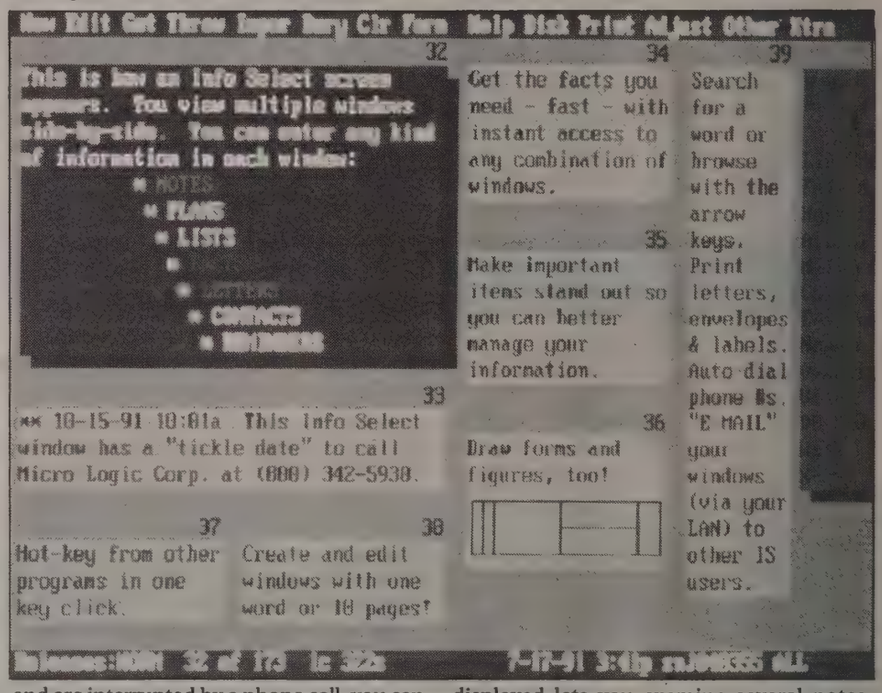
When I first discovered Tornado Notes, I used it every day. When, for some unknown reason, I stopped using it, my desktop returned to being cluttered. Now, with this improved program and its new features, I find it indispensable once again.

Info Select is well designed, so that with only minimal instruction you can benefit from this program almost immediately. When you load the program into your autoexec file, it will be available to you with the touch of a hot key no matter which program you are in. So, if you are working on a report and are interrupted by a phone call, you can call up Info Select by pressing "Alt J." On-screen you will see several small windows, each containing a note or piece of information you have entered into the program. Type "N" and a blank window will instantly appear so you can enter new information. Info Select is convenient for short entries like names, phone numbers, directions, product names—almost anything that formerly went on those little scraps of paper.

As soon as you have completed an entry, simply hit the escape key a couple of times and the window will be saved. To access information, you can browse through the windows that appear alongside each other on the screen. Using the arrow keys moves you between windows. Having multiple windows displayed lets you examine several notes simultaneously.

Although this program is simple in concept, it is quite sophisticated. Information retrieval, for one thing, is almost instantaneous. And no matter how many notes you have, it is easy to locate the one you need—either by remembering when you made it, what it says, or where in the stack of notes it resides. If you need a particular note often, you can shift it to the top of a pile. It is also equally easy to print a note or erase it from a stack.

If you have notes on different subjects, you can create different stacks. For instance, if you keep notes for your business, you might want to set up a business stack as well as a personal stack of notes. You can set up as


32
This is how an Info Select screen appears. You view multiple windows side-by-side. You can enter any kind of information in each window:
* NOTES
* PLANS
* LISTS
34
Get the facts you need - fast - with instant access to any combination of windows.
39
Search for a word or browse with the arrow keys.
35
Make important items stand out so you can better manage your information.
Print letters, envelopes & labels. Auto dial phone #s. "E MAIL" your windows (via your LAN) to other IS users.
33
10-15-91 10:01a This Info Select window has a "tickle date" to call Micro Logic Corp. at (800) 342-5930.
36
Draw forms and figures, too!
37
Hot-key from other programs in one key click.
38
Create and edit windows with one word or 10 pages!

RESOURCES

Info Select, $149.95
MicroLogic, Inc.
PO Box 70
Hackensack, NJ 07602
1-800-342-5930

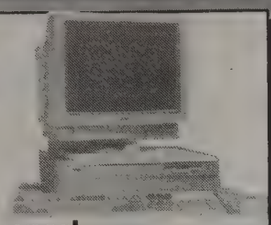
Copyright © 1992 by Ed Kahn. All rights reserved.

Discover Why Our Computers are Better!

Largest Selection of Notebooks & Laptops!

digital

Direct from WINNERS CIRCLE



- On-site support
- New aggressive pricing

Winners Circle Systems Exclusive: Amiga WIN 500 System

- Amiga 500 Computer
- 20MB Internal Hard Disk
- Color Monitor Plus Keyboard, Mouse, & Floppy Drive

$995

Discover Why Winners Circle is the Best Amiga Dealer in the World

Best Network

NOVELL

If you do it right You won't have to do it again

- Custom Design
- Installation & Maintenance
- Extended Software Support

You've seen it advertised for $5000...

BCC

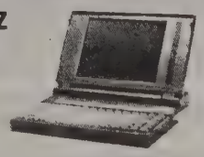
- 386SXL-25MHz processor
- 60MB Hard Disk
- 2MB expandable to 8MB with standard RAM
- Fax/Data Modem
- VGA display

Now Only $2799

MICRONICS COMPUTERS INC

MPACT 386SX

386SX-16 MHz "RATED BEST NOTEBOOK"



- 16 Level VGA w/external
- 40 MB Hard Disk
- 3.5" Floppy Drive
- 6.9 lbs w/battery

$1695

CDTV INTERACTIVE MULTIMEDIA from Commodore

For a Limited Time Grolier Electronic Encyclopedia, and Lemmings Included!

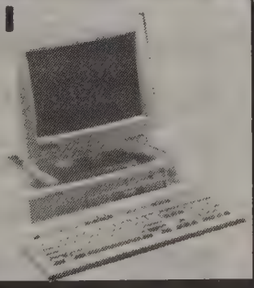
The revolutionary new product that turns your TV into a learning and entertainment center...

$749

HYUNDAI

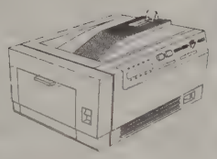
Life-time warranty!

On all computers



QMS

QMS-410



- 17 MHz 68020
- 45 Adobe® PostScript® fonts w/Adobe's ATM
- Automatic Mode Switching Between Macs or PCs
- 2 MB RAM (Exp. to 6 MB)
- Serial/Parallel/Appletalk® Interfaces

$1479

Revolutionary technology lets you print stunning, vivid color on any paper

- Postscript
- Pantone certified
- Prints on paper or transparency film

Tektronix
The best and the brightest

Under $10,000

EPSON® LQ-570

Four Paper Paths

- Includes two scalable fonts, 8 to 32 points
- 12 built-in fonts
- Fast print speeds up to 315 cps
- The latest printer from the industry leader
- Epson's two-year limited warranty

X-10® **Compatible Home Automation/Security Systems**

This is the next generation in home automation and security, all compatible with your computer. The X-10 can handle the following tasks: home management, energy control, light control, pool control, garage door functions, alarm and security, plus a whole lot more. A great time saver for the family, disabled, or the person on the go.

Call for more information

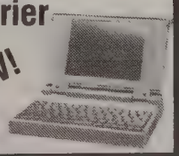
Revolutionary Keymouse Pointing Device

EVEREX COMPUTER SYSTEMS DIVISION

Everex Tempo Carrier

- 5.5 lbs.
- 2 MB RAM expandable to 8 MB
- 40 or 80 MB hard disk
- Carrying case, MS DOS 5.0 mouse & microsoft included

NEW!

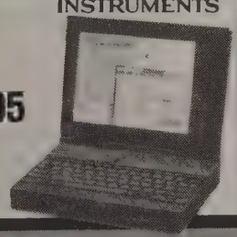


TravelMate 3000

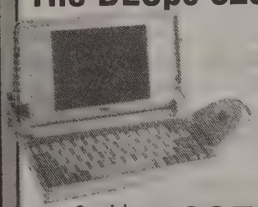
TEXAS INSTRUMENTS

- 386SX
- 2MB RAM
- 40MB Hard Disk
- VGA display
- Weight 5.7 lbs.

$1995 w/this ad



The DECpc 320P Notebook

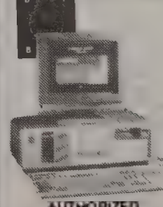


Intel I386sx running at 20 MHz, 2 MB, 40 MB IDE Hard Disk Drive, 3.5" 1.44 MB Floppy, TST Backlit VGA, 2400 bps Data, 84-key Keyboard Logitech TrackMan Portable, MS-DOS 5.0 and MS-Windows 3.0 (factory installed) (carrying case included)

Special Package Price $1995

PC World BEST BUY

EVEREX COMPUTER SYSTEMS DIVISION



EVEREX STEP 286/20/16/12 MHz

The Winner in 80286. Impressive Performance With A Competitive Price

EVEREX STEP 386/25/20/16 MHz

The Fastest 80386 We Have Ever Tested. Well Built Machine With Innovative Write-Back Cache Architecture. A Real Screamer!

AUTHORIZED DEALER

Free On-Site Service

WINNERS CIRCLE SYSTEMS

2618 Telegraph Ave. • Berkeley, California • 510-845-4810 • FAX 510-845-2400

Monday Thru Saturday 10:00-6:00

✶ CD ROM SALE!! ✶

NEW! **INTERNAL CD ROM SCSI** — LINEAR MOTOR/340 MSEC, 1 YEAR WARRANTY — **$299.00 EA.**

NEW! **EXTERNAL CD ROM SCSI** — LINEAR MOTOR/340 MSEC, 1 YEAR WARRANTY — **$350.00 EA.**

SAMSUNG DESKTOP — 386-16 MHz SX, 2 MB RAM, 1.44 MB Floppy, VGA Adapter, IDE Adapter, Windows 3.0, 101 Keyboard 1 Yr Warranty — **$499.00**

SAMSUNG 286-12 LAPTOP — 1 MB RAM, 1.44 MB Floppy, 40 MB Hard Disk, VGA Backlit LCD, Laplink III, Carrying Case & 1 Yr Warranty, External VGA Output — **$799.00**

286-12MHz — 1 MB RAM, 1.2 MB Floppy, 101 Keyboard, DOS 3.3, VGA Mono Monitor, VGA Card, Serial/Parallel — **$299.00** w/80MB ... Add $250.00

MINISCRIBE 9380E — 380 MB ESDI, 16ms F/H 5.25" — **$599.00**

CDC 150 MB — ESDI 18ms F/H 5.25" — **$365.00**

FUJITSU 670 MB SCSI — EXTERNAL H/D 18ms, MAC or IBM — **$1100.00**

RODIME 105 MB — SCSI 18ms 5.25" — **$250.00**

VIDEO SEVEN — Dual Port VGA Card, MDA, EGA, CGA, VGA — **$30.00**

MICROSCIENCE — MFM 40 MB, 25 ms 5.25" — **$175.00**

SAMSUNG SVGA — 14" 1024 x 768, .28 dp, 1 Year Warranty — **$248.00** while supplies last

SAMSUNG SVGA — 17" 1024 x 768, .31 dp, 1 Year Warranty, Non-Interlace — **$799.00** while supplies last

HEWLETT PACKARD — 20" 1280 x 1024, .31 dp Non-Int Color — **$1399.00** while supplies last

360K Floppy Drive, 5.25" H/H — **$35.00**

1.2 MB Floppy Drive, 5.25" H/H — **$55.00**

SONY 1.44 MB Floppy, 3.5" w/Bracket — **$45.00**

EVEREX EV-340 — XT H/D Controller — **$25.00**

DTC 5280 — AT MFM H/D F/D — **$37.00**

DTC 3280 16-Bit — AT SCSI Controller — **$125.00**

XT FLOPPY CONTROLLER — 1.2 MB 360K, 1.44 MB 720K — **$25.00**

FUTURE DOMAIN — SCSI Controller (No Floppy) — **$69.00**

VGA MONO 14" — Flat Screen Monitor — **$75.00**

MAXTOR 40 MB — 18 ms IDE HD — **$190.00**

MAXISWITCH — AT 101 Keyboard, Softkey — **$25.00**

ZENITH UPS — Power Back-up, 600 Watt, Network Compatible — **$299.00**

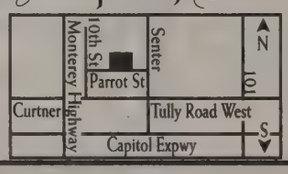
Mono Card	$12
CGA Card	13
EGA Card	25
VGA Card	30

MANY MORE ITEMS–TOO MANY TO LIST! PLEASE COME BY OUR 10,000 SQ. FT. BUILDING

Centurian Computer Surplus, Inc.

490 PARROTT STREET
SAN JOSE, CA 95112
(408) 998-7985
Fax: (408) 998-0236
Mon-Fri 10am-7pm
Sat 9am-2pm

VISA MasterCard
No Personal Checks



MORGAN HILL OFFICE:
180 COCHRANE CIRCLE
MORGAN HILL, CA 95037
(101 South Exit Cochrane Ave
West 3 Lights and Right)
(408) 778-2001 Fax: (408) 778-9420
Mon-Fri 8:30am-5pm Sat 10am-4pm

386/486 System & 286/386X/386DX Systems

FREE ONE YEAR ON-SITE SERVICE

All systems include:
64K cache RAM (for model 3C through 4B)
1.2MB 5.25" drive 1.44MB 3.5" drive
2MB 80ns RAM (for 286)
4MB 80ns RAM (for all 386s)
8MB 70ns RAM (for all 486s)
Quantum IDE hard drives
FCC Class "B" Certified
16 bit SVGA monitor .28 dot pitch
1 parallel/2 serial/1 game ports
MS DOS 5.0
MS Windows 3.0
3-button serial mouse
101 key enhanced keyboard

Buy 386 or 486 system, get FREE Letter Quality Printer
Buy 286 system, get a FREE Math 287-10 Intel Co-processor
Buy XT system, get a FREE Math 8087 Intel Co-processor
Limit of 25 specials per system

Gràfika™ by DTK — *Excellence from Experience™.*

486 DX & SX come with 240 MB, 15ms Hard Drive.
386 DX comes with 120MB,16ms Hard Drive.

MODEL:

2A 286/16 MHz/2MB RAM/52MB 16ms	CALL
3A 386SX/20 MHz/4MB RAM/52MB 16ms	CALL
3B 386DX/25 MHz/4MB RAM	CALL
3C 386DX/33MHz/64K Cache/4MB RAM	CALL
3D 386DX/33MHz/Vertical Case/64 Cache/4MB RAM	CALL
3E 386DX/40 MHz/Vertical Case/64K Cache/4MB RAM	CALL
4A 486DX/33 MHz/Vertical Case/64K Cache/8MB RAM	CALL
4B 486SX/20 MHz/Vertical Case/64K Cache/8MB RAM	CALL

286 main board 10/16	$45	170MB IDE drive Quantum 17MS	459
40MB IDE drives Connor 19MS	185	VGA monitor from	199
80/130MB IDE drives Maxtor	280/325	386-40 main board w/CPU 64K Cache	255
105MB IDE drives NEC 19MS firm	295	XT system 256 256K 1 floppy	165

Case w/power supply 200W start from	55
Daisy Wheel printers start from	100
CPU 386 386, 486 Mac SIMM & DRAM	CALL
AST or HP 286 computer System from	400
Intel 80287-10 90DC (boxed-new)	55
Logitec Photoman	545
Mouse	12

PALO ALTO MICRO CORP.
3483 El Camino Real, 2nd Floor, Palo Alto, California 94306
415-493-6209 FAX 415-493-4572

BUSINESS SOLUTIONS

many stacks as you might want. Once again, a few simple keystrokes will move you from one stack to another.

A new feature in Info Select is the ability to dial telephone numbers inside a note. This means a single note can work as a phone directory: just search the directory for the name you want and then hit the keys to dial the number. Pretty slick!

One of the most powerful features of this program is the ability to create forms. Much like starting any other note, you create a master form. The difference is that the master form has distinct fields into which information can be entered. It is easy, for instance, to make a telephone message form that has fields for the name of the caller, the person called, the phone number, and a message. The message can be as long as you like. You can also set up the master form to automatically enter the date and time as well as sequence number of the note.

Info Select is well designed, so that with only minimal instruction, you can begin to benefit from this program right away. It is convenient for short entries like names, phone numbers, directions, product names—almost anything that formerly went on those little scraps of paper.

And a final feature to mention is the capability in this program for you to create simple lines and boxes on a form. This allows you to design forms that can be printed and duplicated for use by others as well as used within the Info Select program itself.

This is a worthwhile successor to an already excellent program. It will help eliminate the paper clutter on your desk and in your pocket. The program has many other powerful features that I have not mentioned, but it is important to point out that you can begin working with Info Select within minutes. ■

DOMINO COMPUTER SPECIAL

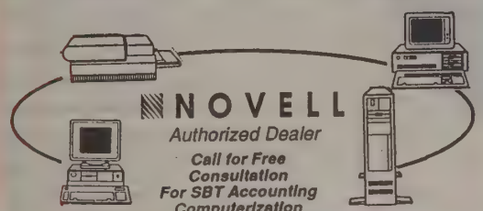
!!! SUPER VGA DEAL !!!

WE OFFER ONLY THE BEST

SERVICE • COMPATABILITY • RELIABILITY • AFFORDABILITY

DOMINO HAS 23 SERVICE CENTERS NEAR YOU

Specialized in Novell and UNIX Networks

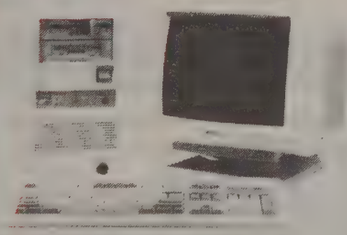


SPEAR® All-In-One VGA Systems

SPEAR 386SX/16
$1458 with 24 Pin Printer

SPEAR 386/33/64K
$1688 with 24 Pin Printer

SPEAR 486/33/256K
$2168 with 24 Pin Printer



with Stereo Sound

Systems come with following features:

Made In USA

- 1MB DRAM
- 1.2MB floppy and 1.44MB floppy
- 40MB hard disk
- 2 serial,1 parallel, 1 game
- Media music card w/2 speakers & KaRaOke
- 1024 x 768 VGA card (512K)
- Super VGA monitor (1024 x 768)
- DOS 5.0, 3-button mouse & mouse pad
- 24-pin Okidata printer and cable
- 1 surge protector
- Hard disk loaded with spreadsheet, word processing, DOS tutor, and many more
- Free Introductory DOS class
- Memory upgrade: per MB ..... $ 50
- Hard disk upgrade: 100MB $125
  200MB $400
- Laser printer upgrade: $400
- Everex Postscript laser printer upgrade: $1150
- CD-ROM Special upgrade $450

SPECIAL: 5% off if you give a Domino reference to your company.

MULTIMEDIA

SONY INT. CD-ROM w/6 Software Packages $450
Sun-Moon-Star External $470
Music Card w/Microphone, amplifier, speaker, etc. $175

DOMINO CLEARANCE CENTER

Located in our Fremont Store

Printers $40-90
DOS 4.01 (Upgradable to 5.0) $15
Used EGA Card & Monitor $130
Used VGA Monitor $150
Refurbished 101 Keyboard (Oki) $15
New Everex XT Computer (1600) $150

SPECIALS

Novell Lite Network Station peer-to-peer w/ethernet card and 20' cable ..... per station–$199
9600B/2400B Fax/Data Modem (Free Prodigy kit) $85
BITFAX for Windows (The Ultimate Software for Fax Modem) $59
BITCOM for Windows (Software for Modem) $59
Windows Accelerator Card $250
Brother 9-pin Printer $140
Brother HJ-100i Notebook Printer $295
Everex Tempo LX-60 Notebook $1770

MACINTOSH CENTER

Located in our Oakland Center
Call 510/839-1800

SHAREWARE AVAILABLE IN OUR STORES

100% financing available for your home computers

OAKLAND
1238 Harrison
Oakland, CA 94612
(Harrison & 12th)
510/839-1800

PLEASANTON
16700 Santa Rita Rd.
Pleasanton, CA 94566
(Pleasant Village Shopping Ctr. at 580)
510/847-1771

FREMONT
46573 Mission Blvd.
Fremont, CA 94539
(Corner of Mission and Warm Springs)
510/623-7181

Domino COMPUTER, INC.

Computer Of The Month

The Bondwell 386SL/F

Bondwell has long been known as a capable laptop manufacturer with strong engineering prowess. It is often hard to differentiate notebook computers these days because all of them are capable of doing the work they are intended to perform. But the new Bondwell entry has a few exciting twists that set it apart from the competition.

This notebook computer weighs 5.2lbs., measures 8.5" x 11" x 1.5", and is lightning fast with a clock speed of 25MHz. Two megabytes of RAM are included, which can be increased up to a total of 8MB. The 386SL/F comes standard with a 60MB hard disk and is powered by an energy efficient 80386SL chip.

The rechargeable NiCad battery in this Bondwell laptop will work for up to ten hours and takes only about two hours to recharge.

Bondwell has designed this machine for performance and slimness. To cut down on size and weight, it has included a 1.44MB floppy drive that plugs into the side of the machine. This external floppy drive is designed better than most other removable floppy drives and is very compact—it measures roughly 4" x 5" x 1.25". This makes it simple to pack almost anywhere and never be far from this drive.

The VGA screen is nearly 8.5" diagonally and displays sixty-four grayscale levels. An external color monitor is easily attached through the video port on the rear of the machine. If an external monitor is attached, the computer will boot up directly with that monitor displaying.

The keyboard is an 80-key design with embedded numeric keypad. Almost all of the small computers these days have this arrangement, which I personally find frustrating, but most also give you the option of attaching a keyboard of your choice. Unfortunately, Bondwell does not offer this option. This is the only major flaw I found with the design of this computer.

Notebook computers are always forced make compromises because of space and weight considerations. The compromise Bondwell made was to include only one serial and one parallel port. However, the built-in Hayes-compatible 2400 baud modem eliminates the problem of how to connect both a modem and a mouse—a basic requirement in today's computer market.

A unique feature of this computer is an elaborate alarm system designed to give warning signals if anyone attempts to move the computer when it is on or use it without an appropriate password. While much is made of this feature in the documentation, I was not terribly impressed; no serious thief is going to be put off by a meek computer alarm sound. Furthermore, the whole alarm system can be disabled by disconnecting the batteries and letting the backup power system run down.

Bondwell has designed a very nice system around the energy efficient processor. The rechargeable NiCad battery will work for up to ten hours and takes only about two hours to recharge. To help conserve power, the unit has an elaborate power conservation mode that shuts down the entire system after periods of nonuse. A touch of any key on the keyboard brings the computer back to life. If you know that you will be away from the computer, you can manually invoke the sleep mode until you are ready to use the machine again. This lets you effectively shut down the unit while in the middle of an application. This feature is becoming more common and is very convenient.

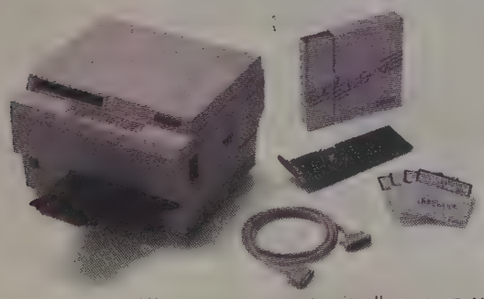
All in all, Bondwell has produced a good machine at a highly competitive price. ■

RESOURCES

386SL/F Notebook Computer, $2199
Bondwell Industrial Co.
47485 Seabridge Dr.
Fremont, CA 94538
(510)490-4300

MACINTOSH OR PC COMPATIBLE LASER PRINTERS

Big Savings on PostScript® Laser Printers!



$995*

JetScript-CX for PC

Low-cost, high performance PostScript printing! The JetScript controller was jointly developed by QMS, Adobe and Hewlett-Packard and provides a 2-3 times performance increase over a PostScript cartridge. Combined with a heavy-duty, rebuilt Canon CX engine it is an unbeatable value in PostScript printing!

- Fits any PC/XT/AT or 286, 386, 486 compatible. Uses 1 full-size slot and installs as an LPT port. No additional hardware or software required.
- Canon laser printer engine for 300 dpi, 8ppm and 300,000 page life. Includes 120 sheet paper cassette
- 35 resident Adobe typefaces scalable from 4 points upward. Fonts can be rotated to any angle in 1° increments
- 3 megabytes RAM on-board for full-page 300 dpi graphics plus more than enough extra memory for additional downloadable fonts
- Uses 16Mhz 68000 processor
- Works great with Windows 3.0, Corel Draw, Ventura Publisher, PageMaker, WordPerfect, MS Word, Quattro Pro, dBase IV, Lotus version 3, Excel, PFS First Publisher and many more

Additional high resolution text cartridges	$59
Ultra Black, graphics toner cartridge	$79
PSFX - Epson to PostScript translator	$85

* Low price includes three toner cartridges! One specially remanufactured toner cartridge with improved toner for richer blacks & two text cartridges.

$1395

LX-29000 for Mac and PC

If you've been waiting for just the right combination of speed, PostScript compatibility and price to buy a new laser printer, wait no more! The LX-29000 features the very latest RISC technology combined with a Canon LX engine and Microsoft's TrueImage for PostScript compatibility.

- Uses the powerful AMD 29000 32-bit RISC processor
- For Macintosh or PC compatibles
- Connects via Centronics, RS-232 or AppleTalk interfaces.
- Automatic interface selection
- 2 megabytes RAM on-board
- Uses 4 ppm Canon LX engine - supplies are widely available
- Includes 35 resident typefaces and accepts all Type 1 and 3 fonts in addition to TrueType fonts
- HP LaserJet II emulation mode for non-PostScript printing
- Includes universal paper tray and toner cartridge
- Compatible with Windows 3.0 and Mac System 7 and any software that supports PostScript or TrueImage printing
- Optional accessories includes a 250-sheet paper feeder, envelope and legal size trays (see below)
- One year warranty on all parts and labor & free phone support

"Not only does this direct-mail printer carry the smallest price tag of the six printers we tested, but we found that it prints the cleanest text as well as sharp, smooth graphics. It handled documents full of EPS graphics and downloadable fonts perfectly, convincing us that TrueImage lives up to its billing for PostScript compatibility"
Publish Magazine, February 1992

$1795

QMS-PS 810 with 3Mb

The QMS-PS 810 was rated the top (five star) printer by Publish Magazine in 1991! Based on renowned QMS technology, our Printer Works "Value Added" PS-810 represents an extraordinary value for a genuine Adobe PostScript machine.

- Uses standard Canon SX engine for 300 dpi and 8 ppm
- Uses a 16Mhz 68000 processor with QMS' ASAP (Advanced Systems Architecture for PostScript) technology
- Genuine Adobe PostScript with 35 resident typefaces
- 3 megabytes RAM installed
- Includes up-to-date Applications Guides for most Mac and PC software packages
- Emulates LaserJet+, Diablo 630, HP 7475A (HP-GL)
- AppleTalk, Centronics, Parallel and RS-232 interfaces
- Includes 200 sheet letter-size paper cassette and one toner cartridge

Legal size paper tray $59 Envelope tray $79

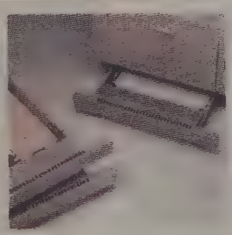
PS-810 Turbo with 4Mb $2195

Same features as above but uses 20Mhz 68020 CPU for improved processing speed and includes a SCSI port for hard disk for extended font library. Includes 39 resident typefaces (adds Helevetica Condensed) and 4 Megabytes of RAM upgradeable to 8 Megabytes.

OPTIONAL ACCESSORIES - PAPER FEEDERS, TONER CARTRIDGES, CABLES & FONTS

✓ Paper Feeders and Trays

250-sheet paper feeder



Installs beneath the LX-29000 or any Canon LX engine printer. The letter tray (included) provides up to 250 sheet capacity. The feeder also allows dual bin operation with the existing LX-29000 paper tray. Additional paper trays are available for Legal size and envelopes. $159.95

Envelope tray
Holds 25 envelopes. Requires paper feeder (sold above). $69.95

Legal paper tray
Holds 250 sheets of 8.5 x 14" paper. Requires paper feeder (sold above). $64.95

✓ Supplies

Toner cartridges

All-in-one toner cartridge for Canon LX laser printer engines, for rich blacks and crisp resolution. Rated for 3500 pages at 5% coverage. For LX-29000, HP Laserjet IIP, Apple Personal LaserWriter series and many other well known brands. Canon LX Toner $79
Canon SX Toner $89

Hammermill Laser Printer Paper
Clay-coated, high contrast paper specifically designed for laser printers. Reduce paper feed jams and get great looking output. Sold only by the ream (500 sheets). $9.95

✓ Fonts

Casady & Greene Fluent Fonts

81 original Adobe Type 1 compatible fonts. Includes Adobe Type Manager (ATM) for Windows 3.0, plus installation software for WordPerfect and Microsoft Word for DOS (PC version only).
PC or Mac Version $109

✓ Cables

AppleTalk kit DIN 8 or DB9
Connects an AppleTalk compatible printer to an existing AppleTalk network. Includes 12' phone cable. $19.95

AppleTalk cable (12') $12.95

IBM Centronics cable
12-foot cable connects a Centronics compatible printer to a parallel port on an IBM PC or compatible computer. $9.95

HIGH-RESOLUTION CONTROLLER UPGRADES

Upgrade your existing printer! The Printer Works can upgrade any 300 dpi Canon CX, LX or SX based laser printer from Apple, Hewlett-Packard and others to **600 dpi** with the XANTE Accel-a-Writer™. Includes high-speed AMD 29000 RISC processor and SCSI interface for fonts. Call us for details about our installation and controller exchange programs.

30 DAY MONEY BACK GUARANTEE

ONE YEAR WARRANTY & FREE PHONE SUPPORT

ORDER TOLL FREE
1-800-225-6116

Store Hours:
Monday & Friday 7:00a.m.-5:30p.m.
Tuesdays -Thursday 7:00a.m.-7:00p.m.
Saturday 10:00a.m.-4:00p.m.

the PRINTER WORKS

3481 Arden Road, Hayward, California 94545
Local 510-887-6116 FAX 510-786-0589

LX-29000, THE PRINTER WORKS AND THE PRINTER WORKS' LOGO ARE TRADEMARKS OF THE PRINTER WORKS, INC. POSTSCRIPT IS A REGISTERED TRADEMARK OF ADOBE SYSTEMS INC. ALL OTHER PRODUCT AND BRAND NAMES ARE TRADEMARKS OR REGISTERED TRADEMARKS OF THEIR RESPECTIVE COMPANIES

LET US IMPROVE YOUR MEMORY with TLC quality upgrades

We at TLC carry an extensive line of 3rd party RAM upgrades for systems ranging from ACER to Zenith. We understand that prices are very volatile in today's market, and memory people with their ads are not making it very easy by listing confusing part numbers that never match. That is why our technical sales staff are standing by to assist you in choosing the best upgrade solution. Our prices are competitive and we will meet any current advertised prices. Our upgrades are warranteed from 5 years to lifetime. We also carry a wide range of laser printers memory from Epson to Panasonic. We also have Math coprocessors from Intel, Cyrix, and IIT. Plus we have Kingston's SX/NOW! processor upgrade for the IBM PC's. We recently added three hard drive lines: Quantum, Conner, Seagate; with capacity ranging from 40MB to 1 GB. Call us for more details. We welcome your inquiries and will accept PO's from qualified firms. MIS personnel are welcome to call for our latest product lists.

AST
IBM
DEC
NEC
SUN
HP
ZENITH
APPLE
TI
DELL
OKI
INTEL
EVEREX
EPSON
SANYO
ALR

AT&T
NCR
SHARP
CYRIX
SIMMs
SIPPs
DRAMs
ACER
CANON
MUCH
MUCH
MORE
R.A.M
FOR
YOUR
PC

APRIL MEMORY SPECIALS

APPLE POWERBOOK 100, 140, 170
- 2MB/4MB/6MB (pseudo static) .. $229/410/555

HP Laser Jet II; IID; III; IIIP; IIID
- 1MB/2MB/4MB $80/125/199

Compaq Desk/Pro 386s; 20; 20e; 25e; 286e
- 1MB/4MB $89/228

Compaq LITE SX 20;25
- 2MB/4MB/8MB $181/400/700

IBM PS/2 Models 50s, 60s, 70
- 1MB/2MB/4MB $53/97/211

SUN IPX, ELC Workstations
- 4MB/16MB $211/750

TOSHIBA 4400SX
- 2MB/4MB/8MB $194/381/743

AST Exec 386SX/20; 386/25; 386/25C
- 1MB/4MB $100/225

IBM PS/2 MEMORY

MDL 30/286; EXPANSION BOARD
- 512K KIT $55
- 2MB KIT 99

MDL 70-061; -121; 55SX; 65SX EXPANSION BOARD
- 1MB MODULE $53

MDL 70-061; -E61; -121; 50Z; 55LS; 65LS; 55SX
- 2MB MODULE $97

MDL 70-A21; -A61; -B21; B61
- 2MB MODULE $97

MDL 55SX; 65SX; 55LS; 65LS
- 4MB MODULE $211

MDL 80-041
- 1MB CARD $53

MDL 80-111; -121; -161; -311; -321
- 2MB CARD $128

MDL 80-A21; -A31
- 4MB CARD $228

MDL 90; 95
- 2MB MODULE $125
- 4MB MODULE 225

MDL 50 & 60
- 2-14MB EXPANSION BOARD $325

MDL 70 & 80
- 2-8MB EXPANSION BOARD $325
- 2-14MB EXPANSION BOARD 330
- 4-16MB EXPANSION BOARD 425

PS/1HOME SYSTEM
- 512K UPGRADE $110
- 2MB UPGRADE 215

TOSHIBA PORTABLE MEMORY

T1200XE	2MB CARD	$98
T1600	2MB CARD	98
T3100SX	2MB CARD	175
	4MB CARD	570
T3100	2MB CARD	375
T3100e	2MB CARD	185
T3100SX & T3200SX	2MB CARD	175
	4MB CARD	570
T3200	3MB CARD	349
T1000SE	1MB CARD	239
XE;LE	2MB CARD	329
T5100	2MB CARD	175
T5200 & T8500	2MB CARD	175
	8MB CARD	825
T2000SX & T2000SXE	1MB CARD	209
	2MB CARD	309
	4MB CARD	550
	8MB CARD	900

COMPAQ MEMORY

DESKPRO 386/20e; 25e
- 1-9MB EXPANSION BOARD $150
- 4-12MB EXPANSION BOARD 310

DESKPRO 386s-16
- 1-9MB EXPANSION BOARD $150
- 4-12MB EXPANSION BOARD 310

DESKPRO 286N; 386N; 386SX/20
- 1MB MODULE $60
- 4MB MODULE 225

DESKPRO 386N; 386SX/20
- 2MB MODULE $120

DESKPRO 386/33L; 486/25; 486/33L; SYSTEM PRO
- 2MB MODULE $125
- 8MB MODULE 425
- 32MB MODULE 2890

DESKPRO 386/16
- 1MB EXPANSION BOARD $393
- 2MB EXPANSION BOARD 530
- 4MB EXPANSION BOARD 700
- 8MB EXPANSION BOARD 1000

COMPAQ LITE SX 20;25
- 2MB/4MB/8MB $181/400/780

PORTABLE 386
- 1MB KIT $240
- 4MB EXPANSION BOARD 595

PORTABLE LTE(8086)
- 512K MODULE $130

PORTABLE LTE/286
- 1MB MODULE $95
- 2MB MODULE 140
- 4MB MODULE 480

PORTABLE LTE/386SX-20
- 1MB MODULE $125
- 4MB MODULE 375

PORTABLE SLT/286
- 1MB MODULE $125
- 4MB MODULE 375

PORTABLE SLT/386
- 1MB MODULE $115
- 2MB MODULE 175
- 4MB MODULE 350

ELECTRONICS NEWS FLASH!!!

As of February 10, 1992, TLC will only carry x9 (by nine) memory modules that are licensed by WANG. WANG Laboratories is actively pursuing their claim of patent infringement of the x9 design. The x9 modules are industry standard and currently being used in many IBM compatibles as well as many workstations. Any resellers, OEM, or end-users selling, purchasing, or using unlicensed modules are liable and may be subjected to a lawsuit by WANG. The latest issue of the Electronics Buyers News will list all licensed manufacturers. To be secured that our clients will never be put at risk of any legal complications, TLC will only carry Telecomputer Inc. modules which are licensed by WANG.

SIMM MODULES SPECIALS

256K x 9	80ns/70ns	$17/25
1MB x 9	80ns/70ns/60ns	$40/48/52
4MB x 9	80ns/70ns/60ns	$145/156/170

LASER PRINTERS MEMORY

HPII; IID; IIP; IID; CANON LBP-8II & LBP-811R; OLIVETTI PG108 & PG208
- 1MB BOARD $80
- 2MB BOARD 125
- 4MB BOARD 199

IBM 4019 & 4019e
- 1MB BOARD $100
- 2MB BOARD 190
- 3.5MB BOARD 330

TI MICROLASER & MICROLASER PS
- 1MB MODULE $85

PANSONIC KX-P4420; KX-P4450i
- 1MB BOARD $110
- 2MB BOARD 170
- 4MB BOARD 270

EPSON EPL-6000; TOSHIBA PAGELASER 6; PACKARD BELL PP9500; FACIT P6060 MANNESMAN TALLY 905; AT&T 593 LASER NCR 6435 LASER
- 1MB BOARD $110
- 2MB BOARD 170
- 4MB BOARD 270

OKIDATA LASER 400
- 1MB BOARD $195
- 2MB BOARD 295

OKIDATA LASER 800 & 820
- 1MB BOARD $200
- 2MB BOARD 300
- 3MB BOARD 400
- 4MB BOARD 500

PANASONIC LASER 4450
- 1MB BOARD $200

PANASONIC LASER KXP4410; KXP4430
- 1MB BOARD $169
- 2MB BOARD 209
- 3MB BOARD 249
- 4MB BOARD 289

TLC COMPONENTS
The Memory Specialists

95 E. SANTA CLARA ST., SAN JOSE, CA 95113

IN CA. (408) 287-4410

OUTSIDE CA. (800) 962-2320

FAX (408) 287-4470

VISA MasterCard

TERMS AND CONDITIONS:

1. TLC will meet or beat any advertised price
2. Full five year warranty with all TLC upgrades
3. Gov't, Universities, and qualified firms Purchase Order accepted
4. U.S and International firms Purchase Orders accepted
5. All sales must include sales tax
6. All sales must be C.O.D. cashier/certified check
7. There is a 15% restocking charge for all refused merchandise
8. Prices subject to change without notice

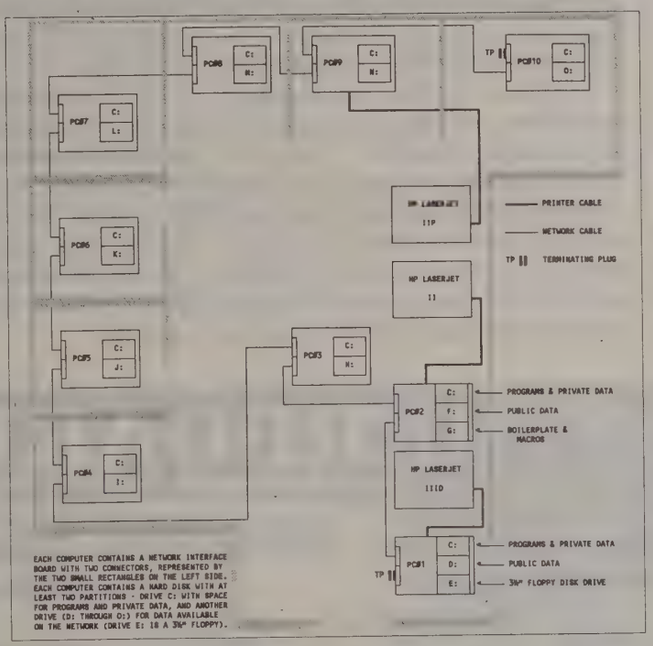
Small Businesses Connect With Peer-To-Peer Networks

Smaller Offices Are Discovering The Benefits From These Lower Cost, Easier To Manage Alternatives To Client-Server Networks

BY MARV DOWNEY

The proliferation of microcomputers brought a tremendous potential for increased efficiency throughout the business community. More recently, local area networks (LANs) have become a central element for the fuller utilization of this technology—both the hardware and software. Sharing printers, modems, programs, and documents between computers throughout a business can make everyone's job easier and more efficient. Accompanying these benefits, however, have been concerns about the cost as well as difficulty of installation and maintenance of a LAN. These concerns can easily discourage new users, especially small businesses.

A rapidly growing number of small organizations, however, are discovering and proving that networks do not need to be expensive or difficult to install and maintain to be useful.



The hard disk on each computer at Charles Bailey & Assoc. is partitioned with space for programs and private data on one side and data available to everyone on its peer-to-peer network.

CONNECTING EVERYONE IN A SMALL OFFICE

The collection of computer equipment at Charles Bailey & Associates, a San Francisco real estate appraisal and consulting organization, like many small businesses, consists of a variety of products from an array of vendors. In the early 1980s, the bulk of their computer technology consisted of a Wang minicomputer with terminals for word processing by the clerical staff. Eventually, this system was also used to make some crude financial projections. As the decade progressed, computers were used for more tasks by more people, including the appraisers. Word processing and spreadsheets often provided the hook that introduced everyone in the office to PCs.

In late 1984, a local consultant brought an IBM PC with Lotus 1-2-3 into Bailey's office. "Suddenly work that would take hours on an HP calculator could be done in minutes, and you could afford the time to test many more assumptions," remembers Steve Radcliffe, an appraiser already familiar with microcomputers from using an Apple II for word processing at a previous job. Soon other appraisers were vying for time on the single IBM PC, which of course, eventually crashed in the middle of a big project.

Most of the appraisers realized that handwriting and/or dictating a report that would be word processed by someone else was unnecessarily cumbersome and mistake-prone. About this time, computers began appearing on most of the desks in the office. As appraisers began typing more of their work, floppy disks were used to transfer the reports to the clerical staff for final preparation and printing.

This process worked smoothly until the arrival of Lori Kaplowitz, the new office manager. She had come from an environment that had a Novell network. Even though she vividly remembered all of the problems with the network, she also knew the potential benefits that a LAN offered. These advantages include reducing the number of different versions of a document on different disks; a storage facility for common, frequently used text (also referred to as a boilerplate), macros, and spreadsheet templates; and the ability to share laser printers. Wary of the complexity and cost of Novell, she suggested they look into a low-cost alternative—a peer-to-peer network.

PEER-TO-PEER ALTERNATIVES

Peer-to-peer refers to a network that is not dependent on a single, large central server computer dedicated to running a complex non-DOS operating system, such as a Novell network. Peer-to-peer network software commonly runs as an add-in with standard MS- or PC-DOS and allows computers on the network to share disk drives and peripherals.

Charles Bailey & Associates chose the LANtastic network from Artisoft to connect their ten desktop computers plus three HP LaserJet printers. The hard disk on each

Copyright © 1991 by Marv Downey. All rights reserved. *Marv Downey is founder and owner of Market Value Systems, a value added reseller (VAR) organization specializing in real estate appraisal computer sales, consultation, and training. Market Value Systems, 1328 6th St., Berkeley, CA 94710. (510)526-7766.*

RESOURCES:

LANtastic Network
Artisoft, Inc.
575 E. River Rd.
Tucson, AZ 85704
(602)293-6363
Fax: (602)293-8065

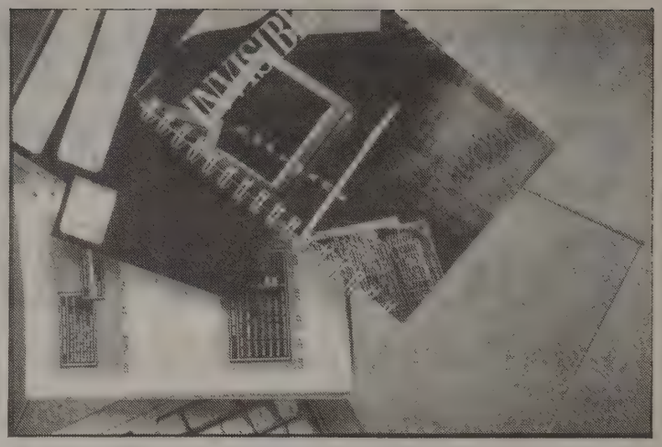
Invisible Network
Invisible Software Inc.
1142 Chess Dr.
Foster City, CA 94404
(415)570-5967
Fax: (415)570-6017

Microstrategies Service
1240 Powell St.,
Suite F
Emeryville, CA 94608
(510)655-4466
Fax: (510)655-1562

SBT Accounting
SBT Corporation
One Harbor Dr.
Sausalito, CA 94965
(415)331-9900
Fax: (415)331-1951

computer was split into two partitions. The first partition (drive C:) contains the programs each user needs and space for storing private files. This partition is not available on the network. The second partition, assigned a different letter on each machine, is available from any other computer on the network. The whole network thus looks identical from each computer: a drive C: with programs and each user's private files, and drives E: through O: representing drives available across the network. The only difference between computers is that default drives for sharing data are set to match the drive letter of the second partition on that particular computer. The main computer system for the clerical staff is equipped with a larger hard disk that has a third partition to store office-wide word processing macros and boilerplate text. Thus, any user can access this data, and create, save, and revise reports onto their hard disk.

The clerical staff now has access to these draft reports without the need to pass floppy disks around the office. Printing can also be done from any PC at any time. "The main benefit for me," says Steve, "is the ability to pull information from the boilerplate area or out of old reports from any computer on the network, whether or not the appraiser who created it is even here. That, and access to the laser printers from my office, makes life much easier."



The Invisible Network, from Invisible Software, offers one of the fastest peer-to-peer networks available today.

After the successful acceptance of this peer-to-peer network by everyone in the office for word processing and spreadsheets, Charles Bailey & Associates added an office-wide contact management program called ACT!, from Contact Software International. ACT! provides a simple, centralized contact list accessible from all of the company's computers.

A tape backup unit is attached to the main clerical computer system. With the peer-to-peer arrangement, any hard disk can be backed up from a single tape drive. LANtastic even allows for a floppy disk drive to be a network drive. Thus, the solitary 3.5" floppy disk drive in the office was assigned a letter on the network, allowing anyone with data on a 3.5" disk to access it from their computer.

This ability to locate printers easily throughout the network is another advantage of the peer-to-peer arrangement. The faster, full-featured LaserJet IIID printer is used primarily by the clerical staff for fin-

MOTHERBOARDS 'R' US!!!

These prices are available now!!!
386SX 16MHz $135
386 25MHz $219

Prices quoted with CPU chip!!!
386 33Mhz w/64K $257
486SX 20MHz $320

Prices quoted with 0M RAM
486 33MHz $535
486 50MHz $782

	MOTHERBOARDS	BASIC SYSTEM
286 12MHZ	$59	$239
286 16MHZ	$73	$243
286 20MHZ	$77	$247
386SX 16MHz	$135	$315
386SX 20MHz	$140	$320
386SX 25MHz	$149	$329
386SX 33MHz	$199	$369
386 25MHz	$219	$399
386 33MHz w/64K	$257	$439
386 40MHz w/64K	$280	$470

	MOTHERBOARDS	BASIC SYSTEM
486SX 20MHz	$320	$500
486SX 33MHz	$469	$649
486SX 40MHz	$609	$789
486 33MHz	$535	$715
486 40MHz w/64K	$590	$770
486 50MHz	$782	$962
386 EISA 33MHz w/64K	$810	$2,010
486 EISA 33MHz w/64K	$1,199	$1,399
486 EISA 33MHz w/256K	$1,265	$1,465
486 EISA 50Mhz w/256K	$1,941	$2,141

intel inside

- 1 Year Guarantee!!
- Fully tested and burned-in
- Prices include CPU

Also...
IDE Multi I/O Card $16
Mono Monitor w/ Card $50

NEW!! **IDE QUAD CARD!!! $69**
4 Hard Drives per Card!!!
Novell Certified!

NEW!! **IDE OCTA-CARD!!! $89**
4 Hard Drives!!
4 Floppy Drives!!
1 Card!! Novell Certified!

Basic Systems include:
Attractive AT Case
Power Supply
Motherboard and CPU
1 MB RAM Onboard
101 Enhanced Keyboard
2 Serial/1Parallel/1 Game Port
1.2M or 1.44M Floppy Drive
IDE 2HD/2FD Controller

Catapult Systems

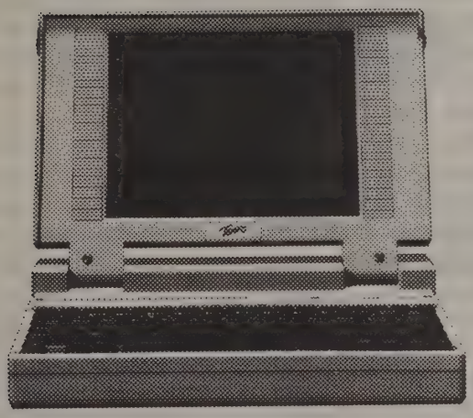
(510) 659-0365
41277 Roberts Ave., Suite 4
Fremont, CA 94538
FAX (510) 659-0772

Catapult welcomes:
Dealers/VARS/System Integrators

(510) 659-0365
Prices and availability subject to change without notice.

Pick Up the TEMPO !

Everex Tempo products from SF MICRO, the No. 1 volume reseller of Everex products in the Bay Area.



TEMPO CARRIER
386SX/20 NOTEBOOK
under 5.5 lbs!

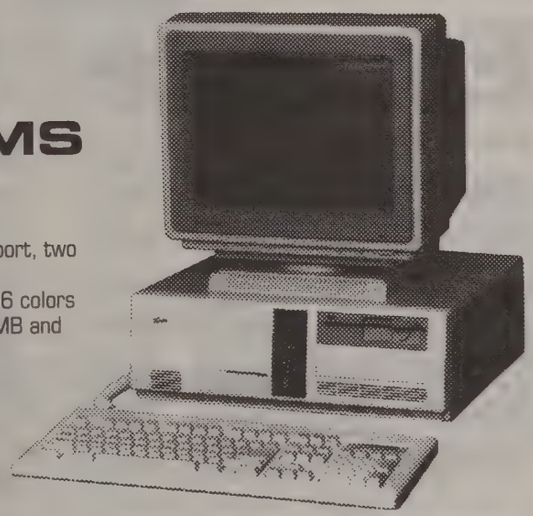
NEW!

- Weighs less than 5.5 pounds with 40MB or 80MB internal hard drive
- 2MB of RAM, supports up to 8MB
- Letter-size (8.5" x 11") footprint
- Rechargeable NiCad battery with AC recharger
- Internal 1.44MB 3.5" floppy drive
- Internal slot for modem
- KeyMouse mouse pointer
- Backlit VGA LCD with 32 shades of gray
- Password protection
- MS-DOS 5.0, Windows 3.0, mouse
- Full nylon carrying case

NEW!

TEMPO
MODULAR SYSTEMS

- Modular design with easily upgradeable processor
- Choice of 486/33, 486SX/20, 386/33 or 386/25 processor
- Integrated system board with VGA graphics adapter, one parallel port, two serial ports and an IDE hard drive/floppy disk controller
- Non-interlaced VGA graphics resolutions up to 1024x768 with 256 colors
- Up to 32MB of 32-bit RAM with 256K cache (128K standard), 1MB and 4MB SIMMs
- Six 16-bit, one 8-bit and one 32-bit proprietary CPU slot
- Small or large footprint chassis
- Supports math coprocessor on CPU board



Quality Service & Support Guaranteed.

HOURS: MF 8:30AM - 5:00 PM PST

SF MICRO

MasterCard VISA

(415) 929-1505

FAX ORDERS ANYTIME! (415) 922-1187

1143 Post Street
San Francisco
California 94109

EVEREX
Authorized Service Center

AUTHORIZED RESELLER:
EVEREX STEP & TEMPO
AST • AGI • NOVELL

All brand and product names are trademarks or registered trademarks of their respective companies.

ished output. Word processing from the appraisers is printed on the LaserJet II, and spreadsheets on the IIP.

In networks and other large peripheral sharing arrangements, the cabling is a key part of the system. This LANtastic network uses both twisted pair cabling in a daisy-chain arrangement and thicker shielded cable to avoid potential problems caused by signal interference. Most cables are run through the ceiling or in channels under the floor.

AN ACCOUNTING SOLUTION

When Penny Brown, the manager of computer operations at Semifreddi's, was considering a new accounting system, she believed some type of LAN was needed for this fast-growing Emeryville bakery. They had been running a modified version of an accounting program from SBT on a standalone PC. When their input and reporting needs overloaded this system, their consultant at Microstrategies Service recommended and installed additional computers and a peer-to-peer LAN from Invisible Software.

Most networked accounting applications, including SBTs, work best in the traditional client-server LAN environment. So, even though Semifreddi's had just installed a peer-to-peer network, all of its programs and data are stored on a single computer. The main difference between this arrangement and a traditional server-based network is that in a peer-to-peer LAN the server can still be used, simultaneously, as a workstation. Plus, the peer-to-peer network operating system is significantly easier to use and maintain.

"We started with just a single Compaq that belonged to one of the owners. But with both accounts receivable and general ledger we needed additional stations," said Penny. While initially apprehensive toward networks, she has been very satisfied with both the Invisible Network and the service from Microstrategies. "I do notice a slowdown in the applications when compared to how they ran on a single PC, but the trade-off of being able to do entry and lookup from multiple workstations, simultaneously, makes the difference well worth it."

It is interesting to note that Microstrategies owner Simrin Khalsa chose Invisible for its speed. "It's the fastest peer-to-peer network we've tested, and it's proven to be very reliable. It's also nice to have a local vendor for fast product delivery and problem resolution."

BEWARE: UPGRADING TO A NETWORK

Computerized accounting in general, and networked accounting in particular, often requires the services of a knowledgeable consultant. Roger Verdieck, of RPV Business Systems, specializes in networking AccountMate accounting software, from SourceMate Information Systems. One of his clients is C. M. Volkman Corp. of Oakland, a manufacturer of bird seed.

Volkman Corp. Vice President Lynn Jepsen is quick to cite the many difficulties they experienced with AccountMate software when they went from two single-user systems to a three-station LANtastic network. "None of it was the fault of the network. It was the upgrade of the programs and issues around multiuser access."

Problems are common with networked database and accounting applications. Both the network operating system and the applications program must share responsibility

Continued on page 244

RESOURCES:

ACT!
Contact Software International, Inc.
1625 W. Crosby Rd., Suite 132
Carrollton, TX 75006
(214)418-1866
Fax: (214)416-2311

AccountMate Accounting Software
SourceMate Information Systems Inc.
20 Sunnyvale Ave.
Mill Valley, CA 94941-1928
(415)381-1011

RPV Business Systems
12 McIntosh Ct.
Novato, CA 94949
Voice and Fax:
(415)883-4260

Easter Super Sales

Basic Systems

286-16	$258
386-16SX	$317
386-25DX	$372
386-33DX w/64K Cache	$429
386-40DX w/64K Cache	$434
486-33DX w/64K Cache	$756
486-33DX w/256K Cache	$789

All Basic Systems Include:
- Motherboard & CPU
- 1MB Memory
- 1.2MB or 1.44MB Floppy Drive
- Internal Clock/Calendar
- Math Coprocessor Socket
- 2 Serial/1 Parallel/1 Game Ports
- 101 Enhanced Keyboard
- Mini Tower or Baby AT Case w/230W Power Supply

Monitors, Graphics Cards

14" SVGA (1024x768) .28mm	$266
14" SVGA Non-Interlaced	$318
14" VGA (640x480) .41mm	$209
Super VGA Card / 512KB	$43
Super VGA Card / 1MB	$68
Standard VGA Card / 256KB	$30
Orchid Pro Designer IIS	$175

Additionals

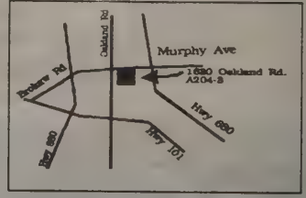
Each Additional 1MB RAM	$39
Each Additional Floppy Drive	$52
2400 Internal Modem	$41
9600 Internal FAX Modem	$75
3-Button Serial Mouse	$15
Z-NIX Mouse w/Windows 3.0	$58
MS DOS 5.0	$38

Hard Drives

40MB IDE	$195
85MB IDE	$275
105MB IDE	$295
125MB IDE	$335
210MB IDE	$570

Motherboard w/CPU

Subtract $186 From Basic Systems.



Call Now!
408-441-8732

Alpha Business Computing
1630 Oakland Rd., Suite A204-3, San Jose, CA 95131
Tel: 408-441-8732 FAX: 408-441-9208
Mon-Sat: 9:00 am - 7:00 pm

C.O.D. VISA MasterCard No Surcharge on VISA & MC

MACINTOSH GUARANTEED LOWEST PRICES!

PARDON US WHILE WE DO THE UNHEARD OF.

Dublin/MicroAge is an Authorized Apple Reseller with a staff of dedicated Mac specialists who will provide you with outstanding service, support, and training. You expect that. What you don't expect is an Authorized Apple Reseller that also offers you the lowest prices. That's unheard of! So check our EVERY DAY LOW PRICES. If that doesn't convince you that we really can offer you the lowest prices, then read our PRICE GUARANTEE. Then come in and enjoy the best of both worlds!

Our Price Guarantee
At Dublin Computer/MicroAge we want you to be 100% satisfied. W e now offer guaranteed lowest prices on any Apple Computer products we sell. If you can find a lower advertised price * from anther autherized dealer, then we will refund the difference. Guaranteed!!
*Within 15 days of purchase.

MACINTOSH TRAINING
Dublin Computer Systems offers a range of Macintosh training courses designed to improve personal and business productivity.

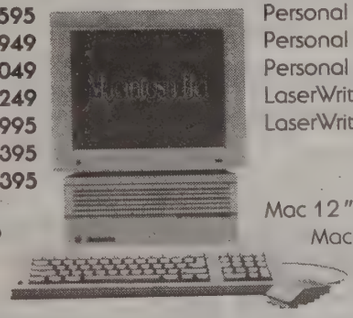
- Training is available at your site, in-store or at our Macintosh Training facility in Pleasanton, CA.
- Class sizes range from 1 to 9 students.
- Courses are taught by qualified Macintosh trainers with years of computer training experience.

COURSES
Intro to the Macintosh
System 7.0
Microsoft Word
Microsoft Excel
PageMaker
WordPerfect
FileMaker Pro
MacDraw Pro
MacPaint
Persuasion
Power Point
Photoshop
OmniPage
Quark XPress
MicroPhone
QuickMail
Tops
Retrospect
KIDS TEACHING KIDS
Works
Great Works
Intro to the Macintosh
Games and Education
Call for pricing and times.

MONSTER SALE PRICES

CPU's

Mac IIci 5MB/105HD	$3199
Mac IIci 5/210	3595
Classic 2/40	949
Classic 4/40	1049
Classic II 4/40	1249
Mac IIsi 3/40	1995
Mac IIsi 5/80	2395
Mac LCII 4/40 w/keyboard	1395
Mac LCII 4/80 w/VRAM, no keyboard	1699
PowerBook 140 4/40	2629
PowerBook 170 4/40	3990
PowerBook Fax/Modem (send & receive)	269
Quadra 700 4/210	5450
Quadra 900 4/600	7999

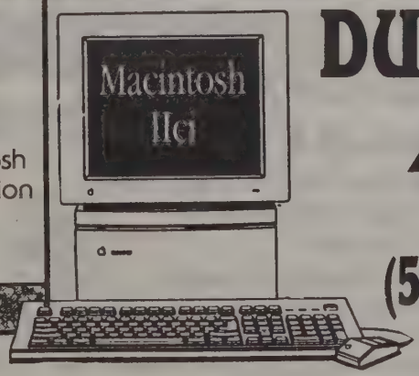


Printers

StyleWriter Printer	$289
Personal LaserWriter LS	899
Personal LaserWriter NT	1375
Personal LaserWriter NTR	1535
LaserWriter IIg w/5MB w/Toner	3888
LaserWriter IIf	2988

Monitors

Mac 12" RGB Display	$399
Mac 12" Mono Display	220
Apple Color Hi-Res Monitor	689
21" Color Display	3485
Radius Pivot for Built-in Video	749



DUBLIN COMPUTER MicroAge

6634 Dublin Boulevard, Suite D
(Next to Pak-N-Save in Dublin)

(510) 829-8644 • (800) 527-2752

Fax: (510) 829-0345

Store Hours: M-Fri 10-6, Sat 10-5,

Authorized Reseller
Apple, the Apple logo, Macintosh, Mac, StyleWriter, and LaserWriter are registered trademarks of Apple Computer, Inc.

EVERY DAY LOW PRICES

Dublin Computer is a full-service reseller. Bring this ad in for a FREE system diagnostic ($60 value).
Expires 5/11/92.

Uncle Ralph's 1-800-My-Uncle

Uncle Ralph's 386-SX

• 2 MB RAM • VGA CARD
• DOS

Includes parallel and 2 serial ports, DOS, floppy drive, enchanced deyboard, VGA card, 2 MB RAM.

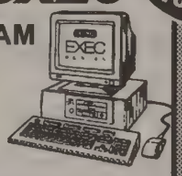
Hard Drive and Monitor optional

$499

All-In-One System

WANG 386SX20

Available Today



- 40MB Hard Drive • 2MB RAM
- 2 Floppy Drives
- VGA Color Monitor
- Windows • MS- Works
- Mouse and More!

Wang Computer Labs have put their mainframe expertise into IBM compatible desktop computing. The Exec 3120 is a complete system that includes DOS 5.0, is Novell Network certified. It's easy to use with Talking Tutor and factory installed software plus more.

1 YearOn-Site Service & Toll-Free Assistance Hotline!

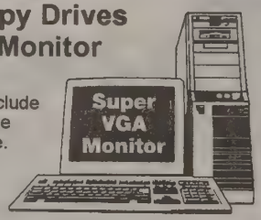
$1299

$65 Month

Our Most Popular Systems

386 & 486 Systems

- 4MB RAM • 2 Floppy Drives
- Super VGA Color Monitor
- 1MB VGA Card



Our most popular systems include DOS 5.0, serial, parallel, game ports, and Static RAM Cache. Their space saving tower design, whisper quiet operation and blinding speed make these wonderful computers to use.

Choose the Configuration that's Right for You

Available Today

120MB Hard Drive	200MB Hard Drive	
386-40	486-33	486-50
$1699	$2299	$2699

Include Uncle Ralph's Lifetime Service Warranty

Logitech Mouse and Microsoft Windows 3.0

LOGITECH

Bundled together with computer system purchase

only $79.95

486-33 MOTHERBOARD

- 128K CACHE
- Holds up to 32MB RAM

$799

Installed in Your Computer with 4MB RAM for only $999

Packard Bell Gives You Up To $1,00000*

worth of Valuable Software & Peripherals

including...
Windows-Mouse
Lotus 1-2-3
Lotus Write
Prodigy
Fax Modem
MS-DOS 5.0
& more with these Packard Bell Computers

*See compter descriptions for specific software included with each system

Available Today

PACKARD BELL
America grew up listening to us. It still does.

Available Today

Ready to Use Today Loaded and Ready to Go

386-SX

- 85 MB Hard Drive
- 2 MB RAM • 2 Floppy Drives
- VGA Color Monitor
- Plus...Mouse, MS-DOS 5.0 with Shell & QBasic, Lotus Works

Legend 300X

$1199

$60 Month

PACKARD BELL
America grew up listening to us. It still does.

Not affiliated with any other Bell System entity. The Intel Inside logo is a trademark of Intel Corp.

386-SX20

Available Today

- 107 Megabyte Hard Drive
- 2 MB RAM
- VGA Color Monitor
- Internal Modem • Mouse
- 2 Floppy Drives
- Plus...Windows, Lotus Works for Windows, Prodigy start-up kit, MS-DOS 5.0 with Shell & QBasic.

$1399 Legend 316x $70 Month

intel inside

386-SX20

Available Today

- 130 Megabyte Hard Drive
- 4 MB RAM • 2 Floppy Drives
- Super VGA Color Monitor
- Internal Modem • Mouse
- Plus...Windows, Lotus 1-2-3 & Lotus Write for Windows, Prodigy start-up kit, MS-DOS 5.0 with Shell & QBasic.

Legend 416x

intel inside

$1699 $85 Month

1 Year On-Site Service on Packard Bell Computers

486 Systems

Available Today

Executive 486-SX20

PACKARD BELL
America grew up listening to us. It still does.

- 107 MB Hard Drive • 4 MB RAM
- Super VGA Color Monitor
- Internal Modem
- 2 Floppy Drives & Mouse
- Plus...Windows, Lotus 1-2-3 & Lotus Write for Windows, Lotus Smart Pics clip art, Prodigy start-up kit, MS-DOS 5.0 with Shell & QBasic.

$100 Month **$1999**

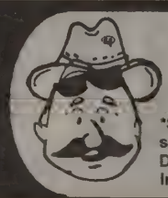
intel inside

Executive 486-33

- 130 MB Hard Drive • 4 MB RAM
- Super VGA Color Monitor
- Internal Fax/Modem
- 2 Floppy Drives & Mouse
- Plus...Windows, Lotus 1-2-3, & Lotus Write for Windows, Lotus Smart Pics clip art, Prodigy start-up kit, MS-DOS 5.0 with Shell & QBasic.

$2399 $120 Month

1 Year On-Site Service



GET YOUR UNCLE RALPH'S CREDIT TODAY!

- LOW MONTHLY PAYMENTS!
- APPROVAL USUALLY WITHIN MINUTES!*

*Subject to lender approval. Monthly payments subject to interest surcharge. Minimum monthly payment per account is $45.00. Down payment may be required.
Interest payments based on 24 months O.A.C. A.P.R. 21%

"Uncle Ralph's Support & Service is the Best I've Seen!" Bernie Zilbergeld Computer Currents

Uncle Ralph's

10 Years of Excellence

On-Site Service

Consultation, Installation, Service and Repair!

Our friendly and helpful sales staff and technicians are available for on-site service. Just call **1-800-My-Uncle**

0% Financing Up to $2500

You can defer payment for 90 days and pay no interest at all. Or you can charge it to your Uncle Ralph's credit card account. Sometimes we even take cash! Credit subject to lender approval.

One Hour Repair Service, 7 Days a Week!

If you have a problem with one of our computers we can usually have it fixed within 1 hour. We have an excellent technical support staff that's dedicated to keeping you happy.

Lowest Prices... Guaranteed!

When you buy at Uncle Ralph's, you get our lowest price gaurantee. If you find it for less at another local dealer we'll match that price, now or up to 30 days after you buy! We'll even give you an extra 10% of the difference for you trouble.

Your Satisfaction Guaranteed

We do everything it takes to keep you happy. If you have equipment problems, or just need advice, we're here to help. And if you're not satisfied with your purchase, we have a 10 day refund or 30 day exchange policy.

Quality-Tested by Fanatics

We pre-screen everything we sell for compatibility & reliability. We know how much you hate it when your equipment is in the shop and we want to keep you happy.

Helpful Advice...

Before you buy we'll take the time to help you choose what's right for you. We have an excellent selection and a knowledgable staff that make it easy for you to make the right decision.

Lifetime Labor Warranty on Uncle Ralph's Brand Computers

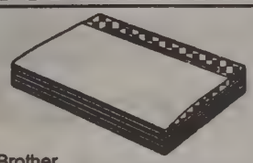
We build our computers to last forever. All parts on Uncle Ralph's B and computers are covered for one year and our labor is guaranteed for life.

SUPER NOTEBOOKS!

The Perfect Laptop Accessory

INK JET PRINTER

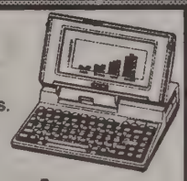
brother/Canon



Tiny, lightweight printer is made by Canon for Brother, it's identical to the Canon BJ10 except for the lower price. Prints at 360 dpi, laser quality text and graphics, runs on battery or AC, even handles envelopes.

$299

The Incredible 4 lb. 286 Notebook!

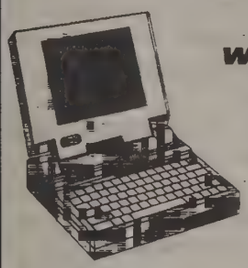


This great little computer weighs only 4.4 lbs. including the internal battery, and is 1-1/4" thick. It comes complete with 20Mb Hard Drive, Backlit VGA Screen & full-sized keyboard. Expandable system has many options available.

$50 Month **$999**

Texas Instruments

AVI 386-SX with 40 Megabyte Hard Drive



We've all fallen in love with this tiny powerhouse. It has a handy auto-resume feature, a great screen, and a quiet 40MB hard drive.

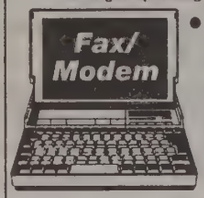
AVI

$1499

$75 Month

PACKARD BELL 386SX-20

America grew up listening to us. It still does.



- **40 Megabyte Hard Drive**
- 20 Megahertz • 2 MB RAM
- Internal Send Fax/Modem
- VGA Screen
- Weighs only 6.9 lbs

$1799

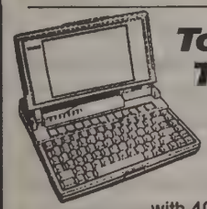
$90 Month

NOT AFFILIATED WITH ANY FORMER BELL SYSTEM ENTITY.

intel inside

The Intel Inside logo is a trademark of Intel Corp

Toshiba T2000SX Notebook



Another great Toshiba computer with 40 MB hard drive, 1 MB RAM expandable to 9 MB, 1.44 MB, floppy drive and serial/parallel ports. Plus fluorescent sidelit LCD display, VGA port and weighs only 6.9 lbs. Includes battery.

TOSHIBA

$95 Month **$1899**

NEC UltraLight III 386SX-20

Similar to Illustration

- 2 MB RAM
- 60MB Hard Drive
- Weighs Under 5 Lbs.
- Windows and Windows Works

Introducing the UltraLite III from NEC. Under 5 lbs, and super thin at only 1.5", it has a large capacity 60MB hard disk and mobile desktop expandability through a unique portable docking system.

$1999 $100 Month

AST Premium 386SX-25

60 Megabyte Hard Drive

- 4 MB RAM
- 25MHz

With its 4 MB RAM expandable to 8 MB, plus VGA output, DOS 5.0, seriel & parallel ports, the new AST will be selling fast. In stock now and priced to move.

$2499

$125 Month

PRINTERS

Panasonic Office Automation

Letter Quality Printer

This proven workhorse prints up to 192 CPS in the draft mode and can produce beautiful text and graphics in the letter quality mode. It comes with a 2 year warranty, and has 5 built-in fonts.

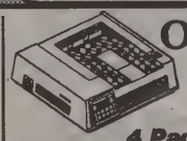
$229

2 Year Warranty!

Near Letter Quality **$168**

Our most popular printer.....

OKIDATA Laser Printer



4 Page Per Minute

This is a 4 page per minute, 300 dot per inch laser printer has crisp blacks and publication quality output. HP Series II compatible, with standard typefaces/fonts and a slim, low-profile design.

5 Year Warranty **$599** $30 Month

EVEREX Postscript with 4.5 MB RAM

This printer is fast, flexible and simple to use. Bundled with 35 Adobe compatible postscript fonts, 4.5 MB RAM, and prints at 6 pages per minute.

6 Page Per Minute Output **$1399** $70 Month

TDK Floppy Disks

Box of 10	
MF 2DD	$5.99
MF 2HD	$9.99
M 2HD	$7.99

with ad

Great Prices on all 5¼" & 3½" Diskettes

2569 Telegraph Ave. Berkeley

5 blocks south of U.C.

841-5280

FREE PARKING!

FAX NUMBER: 841-4743

Open 7 days: M-F 10-8, Sat 10-7, Sun 11-6

Items limited to stock on-hand & subject to prior sale.
Ad expires 4-21-92. © Uncle Ralph's, 1992

Uncle Ralph's

Your Uncle in the Business!

Bridging The Email Abyss

MCI Mail Email Gateway Services Can Solve The Problem Of Maintaining Your Business's Communications Across The World As Well As Across Different Types Of Networks And Computers

BY PETER JOHN HARRISON

Efficient corporate communications, getting information to the people who need it, is an important factor in staying competitive in the modern global marketplace. To keep employees informed, many corporations are using computerized electronic mail systems, or email, to send everything from private messages and company newsletters to management reports and spreadsheet data to people down the hall and around the world.

One of the early selling points LANs had to offer was the availability of email packages that allowed people to send messages to each other, as long as everyone, senders and recipients, were connected to the same LAN. Getting email to or from anyone else, such as field representatives, users of mainframe systems, even to microcomputers attached to a different LAN or email system, was a real hassle. Before email could become a cornerstone of corporate communication, these problems had to be resolved.

Electronic Arts, the San Mateo-based computer games manufacturer, depends on email to maintain its communication with several hundred free-lance software artists, suppliers, and employees, all of this spanning twenty time zones from the United Kingdom to Australia. Peter Brown, Director of Technical Services at Electronic Arts, is charged with keeping everyone in their different geographic and computing environments in touch. "We have PCs, Macs, and a VAX..."

Email at Electronic Arts is further complicated by the lack of a standard email package or LAN system; offices in San Mateo and England use 3+Mail on a 3Com network, while their Canadian and Australian offices have CC:Mail and Novell NetWare. "There's an ongoing discussion about trying to get everyone to use the same email system," says Brown, "but it was initially more practical to find another solution."

To keep everyone communicating, Electronic Arts connects its LAN-based email systems in San Mateo, Australia, and Canada by sending it through a gateway to MCI. At each LAN location, a dedicated workstation running special software collects email sent by local users destined to people at other locations. Then, every fifteen minutes, the gateway systems dial MCI to collect incoming mail and pass outbound messages on for routing to other locations. "We use an old [PC-XT] off our boneheap as a gateway machine," says Brown. "[It's] a great job for a PC that's so slow nobody else wants it."

"We use an old [PC-XT] off our boneheap as a gateway machine. [It's] a great job for a PC that's so slow nobody else wants it." Peter Brown, Director of Technical Services at Electronic Arts

Electronic Arts uses 3Com's 3+Reach for MCI to connect 3Com networks running 3+Mail to MCI, and CC:Mail's CC:Mail Gateway for MCI on their Novell networks. Using MCI's LAN Bridge service as an intermediary provides Electronic Arts with a cost-effective way to connect LANs that would otherwise be isolated by differing email and networking software, as well as geography. "We tried [providing a dial-up connection between] our 3+Mail and CC:Mail packages," comments Brown, "but there were lots of problems." For Electronic Arts, using MCI to pass mail between systems was both easier and more dependable.

Email gateways are available for most LAN-based email systems. Gateways for MCI Mail, AT&T's EasyLink, even the National Science Foundation's Internet can be used to transfer mail between LAN locations.

Gateway packages tend to work with a specific public email carrier, but that doesn't lock you into sending email exclusively to addresses and LAN systems attached to that vendor's network. Most public carriers can exchange messages, and allow users to send and receive mail from competing networks. CompuServe users, for example, can easily send and receive mail from addresses on the Internet or MCI.

To connect to a public email service, most email gateway packages require a dedicated PC, a machine that does nothing but receive and deliver the mail. The gateway computer doesn't have to be a powerhouse, though; an old PC XT or AT, anything that can be connected to a modem and a network interface card, should be adequate for the job. Most gateways work best if they have their own hard disk for storing messages that haven't been sent off-site or routed to the in-house email system yet, and for keeping logs of all in- and outbound activity.

Using your LAN to send electronic mail can make it easy to send phone messages, memos, and reports to people at the same location, but its biggest advantage may be how it can help you keep in touch with people you may never meet in person, or who live in other time zones. People who may be cracking glasses at their neighborhood pub or sound asleep by the time you get to work. Ensuring smooth and timely communication can make the difference between keeping a business account or losing it to your competitor. ■

RESOURCES:

3Com Corp.
5400 Bayfront Plaza
Santa Clara, CA 95052
(408)764-5000

CC:Mail
2141 Landings Dr.
Mountain View, CA
94043
(415)961-8800

MCI Mail
1111 19th St. N.W.,
#500
Washington, DC 20036
1-800-444-6245

© Copyright 1992 by Peter Harrison. All rights reserved. *Peter Harrison, a San Francisco-based data communications and connectivity specialist, can be reached via Usenet (peterh@well.sf.ca.us) or CompuServe (74017,1716).*

You may have heard about Colfax; because when a company does something different, something better, something right - People Listen.

Maybe you've read about Colfax; because when a company does things that make doing business easier or improve the bottom line - Editors Write.

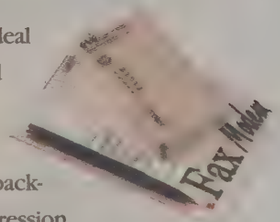
If you're already a Colfax customer; you're probably telling others about our friendly customer service, knowledgeable technical support, "hassle free" return goods policy and competitive prices.

Colfax was founded in 1987, on the premise that a successful business delivers more than the products it sells. Colfax has carefully selected the manufacturers it represents, choosing only those that embody its own philosophy of offering extra value and extraordinary customer service. One such manufacturer is GVC, who for more than seven years has been designing and engineering a full and complete line of internal, external and portable modems. GVC's sophisticated research and development team has developed modems that offer more value than any other manufacturer and, like Colfax, they have been both recognized and rewarded for their efforts. Customers such as the armed forces, IBM, General Motors, TWA, Bell Atlantic and many others have come to depend on GVC's quality and reliability. When you purchase a GVC modem from Colfax - you will too.

Colfax and its president, Gautam Shah, has been commended by GVC's president, Charles Lee, for its outstanding sales achievement and commitment to customer service over the past 2 years. In Lee's words, "Colfax embodies what an ideal sales organization is all about. Colfax salespeople are very knowledgeable and courteous and have demonstrated an in-depth understanding of our complete product line."

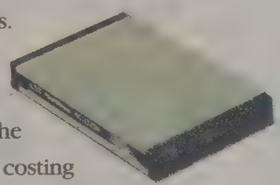
Lee's comments, like those of other manufacturers and customers, underscore the fulfillment of Colfax's commitment to you.

GVC Model FMM9696/24V



This full featured, pocket sized modem is the ideal companion for notebooks or laptops. Designed and engineered for worldwide compatibility, the Pocket Fax features include: auto answer, auto dial and re-dial, scheduled transmissions, background faxing, error correction and data compression. Comes complete with easy to use software and a 5 year warranty.

GVC Model SM96V



The SM96V was the smallest and one of two least expensive modems tested in PC Week's Performance Labs. The SM96V was not only one of the fastest but tied for top honors in the V.32/V.42/V.42bis compatibility tests. This GVC model offers all the features you would expect to find in a modem costing several hundred dollars more and comes with a 5 year warranty.

COLFAX *and* GVC

Committed to state-of-the-art products, knowledgeable technical support and outstanding customer service.

COLFAX INTERNATIONAL

2284 Old Middlefield Way, Ste. 12, Mountain View, CA 94043, Tel: (415) 968-3806, Fax: (415) 968-6955

THE WORLD OF DESKTOPS

Super Deal from Computown

Come See It Today!

AST 386SX/20

- AST 80386SX/20 Processor
- 2MB RAM (up to 16MB)
- 40MB Hard Drive
- Both 1.2MB & 1.44MB Floppy Drives
- AST Color VGA Monitor & Card
- 101 Keyboard
- 2 Ser/1 Par/1 Mouse Port

AST Office Advantage Series

$1495

Free Software

- ▲ Lotus 1-2-3 for Windows
- ▲ Windows 3.0
- ▲ Mouse
- ▲ MS DOS 5.0

AST. Authorized Systems Reseller

1 Year On-Site Warranty

Call For Custom Configurations

SAN FRANCISCO
Phelan Bldg., 760 Market Street, Suite 219
(415) 956-8696
OPEN M-F 8-6, SAT. 11-4

PLEASANT HILL
1525 Contra Costa Blvd.
(510) 682-8696
OPEN M-F 9-6, SAT. 10-4

MOUNTAIN VIEW
2444-A Old Middlefield Way
(415) 962-8696
(800) 498-TOWN. Sales Calls Only
OPEN M-F 8-6, SAT. 11-4

THE WORLD OF NOTEBOOKS

Compaq LTE Lite/25

- 80386SL/25
- 16KB Cache
- 4MB RAM (up to 10MB)
- 1S/1P/Keybd Port
- 9.5" VGA Display, up to 64 Shades
- 1.44 MB Floppy Drive
- 60/80/120MB Hard Drive
- 6 lbs.

New Arrival COMPAQ

Compaq LTE Lite/20

- 80386SL/20
- 2MB RAM (up to 10MB)
- 1S/1P/Keybd Port
- 9.5" VGA Display, up to 64 Shades
- 1.44 MB Floppy Drive
- 40/60/80MB Hard Drive
- 6 lbs.

Coming Soon COMPAQ

Toshiba T6400SX

- i486DX/33 or i486SX/25
- 8KB Cache
- 4MB RAM (up to 20MB)
- DX with 200MB Hard Drive
- SX with 120MB Hard Drive
- 1.44 MB Floppy Drive
- 1S/1P/1 Keybd/1 Mouse Port
- VGA Display Choice of:
  - TFT Active Matrix Color
  - or
  - Gas Plasma

New Arrival TOSHIBA

Toshiba T4400SX

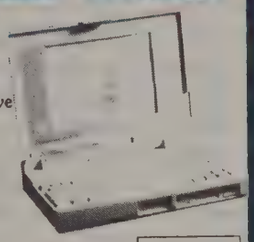
- i486SX/25 Processor
- 8KB Cache
- Upgreadable to 25MHz 80486DX
- 2MB RAM (up to 10MB)
- 80MB Hard Drive
- 1.44 MB Floppy Drive
- 1S/1P/1 Mouse Port
- VGA Display Choice of:
  - Gas Plasma, 16 Shades
  - or
  - LCD, 64 Shades

New Arrival TOSHIBA

AST Premium™ Exec™ 386SX/25L

Color Laptop

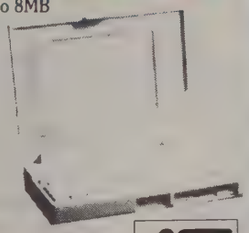
- 386SX/25 MHz
- 1.44MB Floppy Drive
- 60MB or 80MB Hard Drive
- 4MB RAM (up to 8MB)
- VGA, EGA, CGA, & MDA compatible
- 16 colors at 640x480
- 256 colors at 320x200



New Arrival AST® Authorized System Reseller

AST Premium™ Exec™ 386SX/25

- 4MB RAM expandable to 8MB
- 1.44MB Floppy Drive
- 60/80MB Hard Drive
- VGA output 32 shades of gray
- DOS 5.0
- 1 Serial/1 Parallel port



In Stock AST® Authorized System Reseller

NEC UltraLite™ 386SX-20MHz

- Standard 386SX-20MHz
- 40/60MB Hard Drive
- VGA-16 levels of grey
- Parallel/Serial/VGA/SCSI ports (New)
- Standard with Microsoft Windows 3.0
- 6.4 lbs.

On Demo NEC

NEC ProSpeed 486SX/C

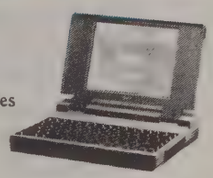
Color Laptop

- i486SX/20
- 2MB RAM (up to 20MB)
- 1.44MB Floppy Drive
- 120MB Hard Drive
- 10.4" Color Active Matrix Display
- 1S/1P/1Mouse/1VGA Port
- Full Size 32-Bit EISA/ISA Slot
- DOS 5.0 & Windows 3.0

New Arrival NEC

Everex Tempo Carrier

- 80386SX/20 Processor
- 2MB RAM (up to 8MB)
- 40/80MB Hard Drive
- 1.44MB Floppy Drive
- 2S/1P/1 Keybd Port
- LCD VGA with 32 Shades
- 5.3 lbs.



In Stock EVEREX

Toshiba T2200SX

- 20MHz, 386™SX processor
- 40MB or 60MB Hard Drive
- 1.44MB Floppy Drive
- 2MB RAM (up to 10MB)
- VGA display with 16 shades
- 5.5 lbs.

On Demo TOSHIBA

TravelMate 2000

- 80C286-6/7-16/12 MHz
- 1MB RAM (up to 3MB)
- 20/40MB Hard Disk
- LCD VGA display, 16 shades
- 1 serial/1 parallel port
- DOS 4.01, laplink, battery watch
- 4.4 lbs, 8.5" x 11" x 1.4"

In Stock TEXAS INSTRUMENTS

TravelMate 3000 Win SX

- 80386SX/8/10/20 MHz
- 4MB RAM (up to 6MB)
- 60/80MB Hard Drive
- 1.44/720K Floppy
- LCD VGA, 32 shades
- 1S/1P/1 VGA 1/Mouse/Expansion Bus
- DOS 4.01, Battery watch
- Windows 3.0 & Mouse

On Demo TEXAS INSTRUMENTS

AST, AST Logo and AST Premium registered & Exec trademark AST Research, Inc.

MILPITAS
372 So. Abbott Ave.
(408) 262-1200
(800) 877-9642 Sales Calls Only
OPEN M-F 9-6, SAT. 11-4

COMPUTOWN
"MORE THAN A COMPUTER STORE"

Building A Hybrid Network With 10BaseT

Part 1

BY WAYNE A. YACCO

LOCAL AREA NETWORKS

The evolution of Ethernet has been from thick to thin to unshielded twisted pair (UTP). If you've been considering twisted-pair Ethernet (TPE, aka 10BaseT), the good news is that you don't have to scrap your network and start over. Consider a hybrid system. You can preserve your investment, and take advantage of TPE's benefits at the same time, by combining different types of cabling with special converters and concentrators.

A hybrid system has no disadvantage compared to a purebred one, and there are advantages to incorporating UTP in your network. First, UTP is the easiest and least expensive cable to install. You can often use existing telephone pairs. It's almost idiot-proof: There's no bus cable to break or terminators to remove. Its star topology is also more reliable than a thick or thin bus topology, because each node constitutes an independent segment. If a segment fails, the rest of the nodes are unaffected. Also, prices for 10BaseT NICs and concentrators are falling to the point where it's getting easier to justify TPE even when installation and cable costs aren't significant.

The one thing lacking in TPE is the longer distances supported by thick or thin backbones, but there are ways around that limitation with cascaded concentrators, repeaters, and bridges. For example, it's easy to connect a small department's thinnet backbone to a 10BaseT hub or to another thinnet backbone using TPE.

Copyright © 1992 by Wayne A. Yacco. All rights reserved. *An editor, writer, and consultant specializing in microcomputers and their business applications, Wayne Yacco writes articles, columns, and reviews for many trade and business publications. He can be reached at PO Box 269, Burbank, CA 91503.*

CONNECTING BACKBONES TO HUBS

You can connect a thinnet backbone to a 10BaseT network by putting an inexpensive concentrator (or hub) in a computer and cascading it to the central concentrator in your wiring closet. Most of these internal hubs either have the BNC connector you need for a thinnet backbone, or offer it as an option. Once a thinnet backbone is connected to a local hub, it can become part of the network in the wiring closet through a single UTP drop.

The smallest possible hub has an advantage in this application, because you don't have to pay for a lot of RJ-45 ports that you don't need. Pivotal pioneered low-cost concentrators with its first 4-port hub a little over a year ago. It has a BNC connector built right into it, and the company also offers an expansible 12-port version. Now Artisoft, D-Link, MiLAN, and others also make 4- to 12-port hubs—many with expansion modules—that plug into a PC's bus.

Artisoft's PeerHub is an example that uses an optional interface kit, based on the company's AE-3 NIC, to provide either a BNC or AUI port. The kit connects to the hub via a special internal AUI port, leaving all of the hub's five external ports free. (Of course, the host computer is also connected to this backbone by the AE-3.) Alternatively, either of two internal UTP ports on the hub can be used to directly connect just the host computer to the network using a similar internal UTP port found on Artisoft's family of AE-1, AE-2, and AE-3 Ethernet NICs. Both internal UTP ports can also be used together to cascade up to four Peer-Hubs. And because these hubs include firmware, you can create a 20-port concentrator in a passive backplane (without a CPU).

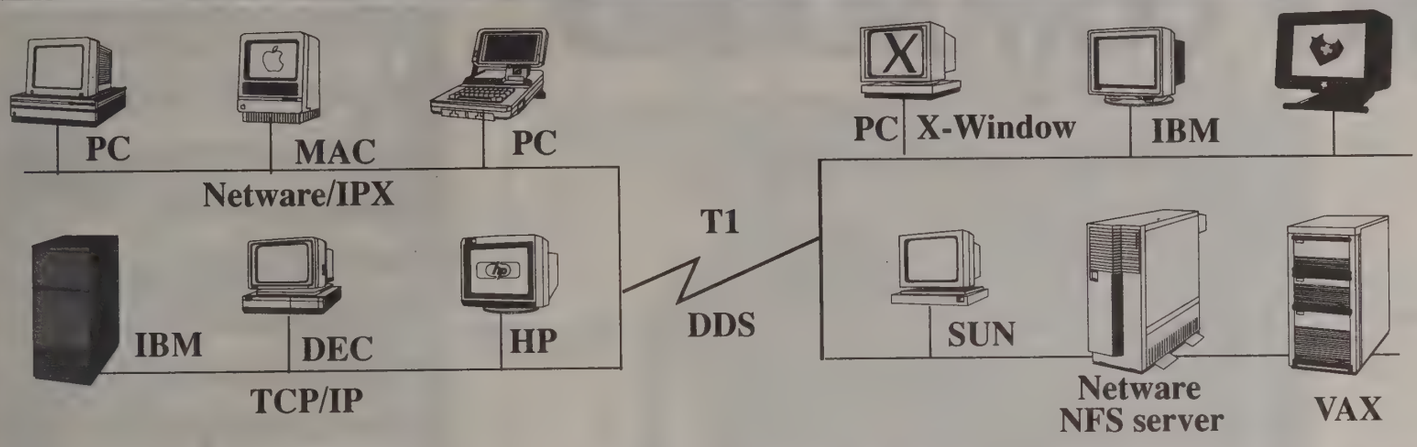
At least one internal hub, D-Link's DE-205TP Hub Ethernet Adapter, has a network controller built into it. It frees a slot, and saves the cost of a separate NIC for the machine where the hub is installed. Moreover, it supports both NetBIOS and IPX for use with NetWare, SCO UNIX, Sun PC-NFS, NDIS (LANmanager, Banyan Vines, DECnet Pathworks), ODI, and Nexos.

CONNECTING BACKBONES TO BACKBONES

Similarly, these inexpensive hubs can connect two thinnet segments. Just connect one

A useful strategy, when several machines are together in a close group, is to connect them with thinnet, and then connect that bus to UTP without a hub. This is what Apple and Taligent are doing for some of their power developers who use several machines on a single desk.

NAC Knows NETWORKS!



Novell NetWare

NetWare Special

Novell Gold Authorized Reseller

v3.11, 20 user....$1840

Netware NFS.... Call

Special Bundle Kits

v3.11, 20 user.... w/ 10 Ethernet Card	$3249
v3.11, 10 user.... w/ 5 Ethernet Card	$2079
v2.2, 5 user..... w/ 4 Arcnet Card	$859

2-Node NetWare-Lite Kit

Kit include NICs, Cable, and Connectors $325

CHOICES

NOVELL
SMC
EVEREX
WOLLONGONG
DAVID SYSTEM
FTP
intel
3Com
digital™
SCO THE SANTA CRUZ OPERATION
LANtastic™ ARTISOFT INC.
ALR Advanced Logic Research, Inc

****** SERVICES ******

- •Network System Design
- •App. Software Support
- •Hardware Configuration
- •System Training
- •System Integration
- •Telephone Support
- •Network Cabling
- •On-Site Maintenance
- •Software Installation
- •Custom Programming

Network Equipment

1000' cable	$200
AMP BNC Male (10 pack)	$30
Terminator (thin)	$6
Terminator (thick)	$12
Barrel	$6
15' or 25' assembled cable	$20
AMP Crimp Tool	$225
IBM T.R. Patch Cable 8'	$25
Transceiver (10 BaseT)	$135
Transceiver (BNC)	$135
Transceiver(Vampire)	$130
Transceiver Cable 5 meter	$45
3COM 12-port 10Base T Multiconnect	$1550
Interlan 8-port Repeater/Thin	$1795
David System 12-prot Hub/10T	$795
3COM LAN Scanner	$1195

SPARC Workstation

- •25M Hz SPARCworkstation
- •16 RAM
- •Floppy Drive
- •High Resolution 15" Color Monitor 1152x900
- •Three S-Bus Slots for I/O Expansion
- •Simultaneous Access to DOS option

Compatibility Guaranteed or Money Back

$4995

•SPARC is a trademark of SPARC International

Network Adapters

3Com coax	$172
3Com 10T	$183
SMC (WD) 8-bit coax	$148
SMC (WD) 8-bit 10T	$185
Intel 16-bit Coax	$145
Asante Ethernet	$265
Dayna Etherprint	$415
Intel Netport	$525
Lantastic Ether Kit	$425
Lantastic Arcnet Kit	$325
Xircom Pocket Adapter.	$395

TCP/IP - NFS
X-Window for PCs

TCP/IP Bundles

TCP/IP- DOS	$465
TCP/IP-Netware	$495
TCP/IP-MAC	$515
TCP/IP-XENIX	$695
TCP/IP-Unix 386	$550

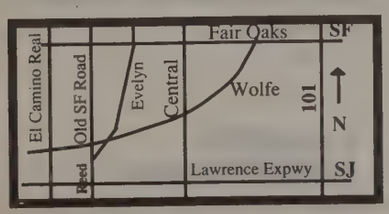
NFS Bundles

NFS for DOS	$495
NFS for Netware	$585
NFS for Mac	$785
NFS for Unix 386	$745

X-Window Bundles

X-window w/TCP/IP	$425
X-window w/PC-NFS	$960
X-window for Netware	$950
X-window w/TIGA video card	$1820

Price includes High Performance Ethernet Card & SW



Network Associates Corporation

(408) 733-2600 ext 101

FAX (408) 733-4268

720 E. Evelyn Ave., Sunnyvale, CA 94086

Not responsible for typographic errors. Subject to stock on hand. Prices subject to change

YOUR WORD IS MY COMMAND

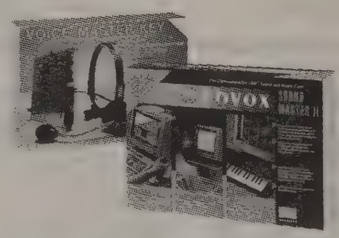
Introducing voice command computing by COVOX.

Imagine telling your computer to "print the page" or "retrieve a file" and having your command executed! Sound easy? It is, with Covox's Voice Master Key or the Sound Master II.

Voice commands can increase your productivity up to 60% while using WordPerfect or other DOS applications. Voice Master Key is the world's best-selling voice recognition system for IBM based computers.

The Sound Master II comes complete with MIDI, AdLib, Sound Blaster and Voice Master Key compatibility from the nation's oldest and largest dealer/support center for Covox products, Byte-Size Stores, Inc.

Call 1-800-877-7040 to order your Covox system today!



Byte-Size Stores, Inc.

1-800-877-7040 *Tomorrow's Computer Products Today!*

© 1992 Byte-Size Stores, Inc. Covox, Voice Master Key and Sound Master II are registered trademarks of Covox, Inc.
Names of other products mentioned herein are used for identification purposes only and may be the trademarks and/or registered trademarks of their respective companies. MADE IN U.S.A.

RENTALS & RENT TO OWN

IBM • COMPATIBLES • MACINTOSH
LAPTOPS • PRINTERS (including HP, PANASONIC & POSTSCRIPT LASER PRINTERS)
COPIERS • OFFICE FURNITURE
FACSIMILE (FAX) • PRESENTATION SYSTEMS

Daily • Weekly • Monthly • Quarterly Rates

FOR MORE INFORMATION REGARDING SALES AND SERVICE PLEASE CALL

Computertime

San Rafael
999 Andersen Dr.
(415) 459-8080

SF & Bay Area
Delivery Available
(415) 397-6776

A hybrid system has no disadvantage compared to a purebred one, and there are advantages to incorporating unshielded twisted pair in your network.

hub to each of the backbones, and cascade the hubs with a single UTP segment. (A crossover cable will usually be required for hub-to-hub connections).

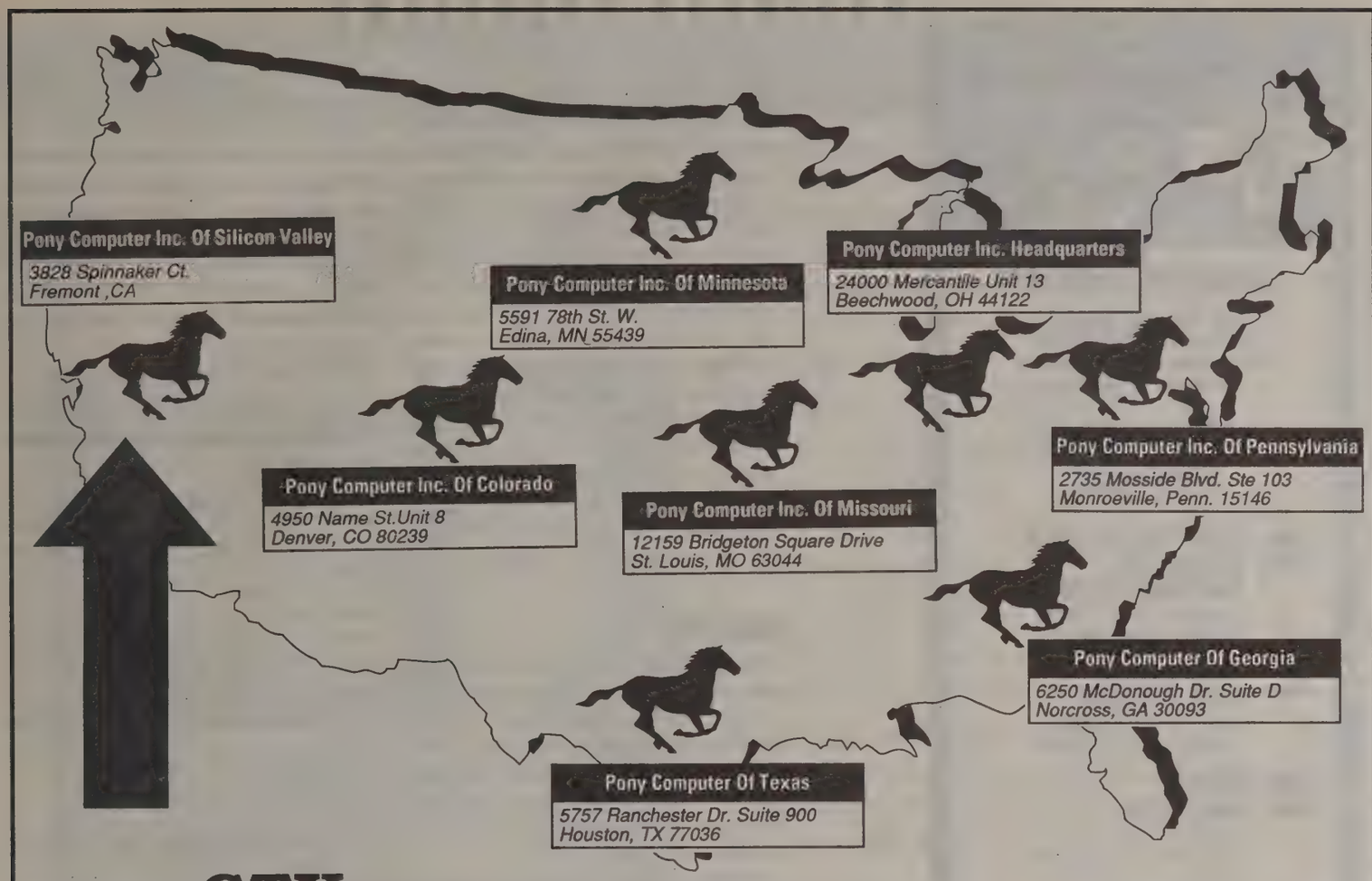
USING TRANSCEIVERS TO CONVERT AUI PORTS TO 10BASET

If you want to connect NICs using their AUI ports, there are external transceivers that will get you directly into 10BaseT. Farallon and MiLAN Technology both have adapters that will turn an AUI port directly into a 10BaseT transceiver.

Naturally, Farallon's PhoneNET StarConnector EN is also available in a model that converts Apple's 14-pin Ethernet connector to twisted pair. MiLAN, too, offers a second flavor of AUI converter in addition to its Micro-Twist. Its Micro-Mau converts an AUI port into a thinnet transceiver. (MiLAN also makes transceivers that connect to thicknet through N-type connectors or vampire taps.) Both the Farallon and MiLAN units have status lamps for power, link, send, receive, and collision on their converters. They both have switchable SQE heartbeats too. So, they can be used with SQE on, to connect hubs to NICs, or with SQE off, to cascade hubs or connect them to repeaters or routers.

CASCADING CONCENTRATORS

If you're short of UTP drops, hubs can


Pony Computer Inc. Of Silicon Valley
3828 Spinnaker Ct.
Fremont ,CA
Pony Computer Inc. Of Minnesota
5591 78th St. W.
Edina, MN 55439
Pony Computer Inc. Headquarters
24000 Mercantile Unit 13
Beechwood, OH 44122
Pony Computer Inc. Of Pennsylvania
2735 Mosside Blvd. Ste 103
Monroeville, Penn. 15146
Pony Computer Inc. Of Colorado
4950 Name St.Unit 8
Denver, CO 80239
Pony Computer Inc. Of Missouri
12159 Bridgeton Square Drive
St. Louis, MO 63044
Pony Computer Of Georgia
6250 McDonough Dr. Suite D
Norcross, GA 30093
Pony Computer Of Texas
5757 Ranchester Dr. Suite 900
Houston, TX 77036

A world leader in **CTX** Distribution

Now Proudly Serving Silicon Valley

As a Master Distributor Pony Computer Inc. offers a comprehensive line of computer and network products from 286 workstations to 486 file servers. And all of our systems come with FCC class A and B certification backed with our industry leading **3 YEAR PARTS AND LABOR LIMITED WARRANTY.**

OUR LARGE INVENTORY OF PARTS AND COMPONENTS INCLUDE:

CTX	**STAR**	**WESTERN DIGITAL**	**FOCUS**
FOX	**CHINON**	**SEAGATE**	**TSENG LABS**
POSONIC	**D-LINK**	**MAXTOR**	**TRIDENT**
SAMPO	**PANASONIC**	**CONNER**	**ACUMOS**

If You're a VAR, DEALER, RESELLER, OR CONSULTANT
Call today for the best price and service you can get on quality computer and network products.

PONY™
COMPUTERS INC.

3823 Spinnaker Ct.
Fremont, CA 94538
TEL: (510) 623-8297
FAX: (510) 623-0314

CALIFORNIA
Computer Show & Sale

LOWEST PRICES IN THE USA!
PC Compatibles • Hardware • Software • Accessories

UPCOMING SHOWS

SANTA CLARA COUNTY FAIRGROUNDS
April 25, 1992 • 344 Tully Rd., San Jose

OAKLAND COLISEUM
May 2, 1992 • I-880 & Hegenberger, Oakland

COW PALACE
May 9, 1992 • Corner of Geneva & Santos, SF

*ALAMEDA COUNTY FAIRGROUNDS
May 10, 1992 • 4501 Pleasanton Ave., Pleasanton
*Sunday May 10th • Mothers Day Special All mothers admitted free to the Alameda County Fairgrounds Show.

SANTA CLARA COUNTY FAIRGROUNDS
May 16, 1992 • 344 Tully Rd., San Jose

OAKLAND COLISEUM
June 6, 1992 • I-880 & Hegenberger, Oakland

All Shows from 10a.m. to 4p.m.
Admission: $6.00
Children under 12 FREE
FOR INFO. CALL 1-800-533-7220
BBS: 415-340-9370

$1.00 OFF
Good For All Of The Above Shows.
Limit 1 discount per person.
Regular Admission $6.00
Copies accepted.

also solve that problem by concentrating a number of UTP segments, and repeating them over a single drop to the wiring closet.

However, if you don't need to include a local backbone, Shiva's 5-port Hublet can be a better choice than an internal hub. It's specially designed to concentrate a small group of outlying segments on a single drop. Up to four nodes (or segments) can be connected to the Hublet, and still leave a port for cascading. The fifth port is already wired to cascade, and doesn't need a crossover cable. (If you want to use the Hublet as a 5-port hub for a small network, then you'll need a crossover cable to turn the cascade port into an input.) And you can cascade Hublets to concentrate more than four segments on a UTP drop.

CHEATING

There's another trick that can solve the single-drop dilemma too: going the other way, and adding thinnet to a 10BaseT network. While you can cascade concentrators to increase the number of segments on a UTP drop, the retiming circuits in those devices impose a significant limit on how many of them can connect to your network.

Therefore, a useful strategy, when several machines are together in a close group, is to connect them with thinnet, and then connect that bus to UTP without a hub. This is what Apple and Taligent are doing for some of their power developers who use several machines on a single desk. Next month, I'll get into the reasons behind hub and repeater limits and tell you about MiLAN's Alternet, the device Apple and Taligent—as well as Borland, HP, and others—are using to connect thinnet and UTP segments without retiming.

CASTING BREAD UPON THE WATER

In a recent column, I raved about a couple of new Goldstein and Blair books for the Mac. I suspect that somebody at M&T Books is spying on this column, because Margaret Garcia-Boesch sent me a couple of unsolicited titles. I'm glad she did. *Building Local Area Networks* (Patrick Corrigan and Aisling Guy) and *The NetWare Decoder* (Ellen Thro) are just terrific.

Building covers just about everything you need to know about networks. From photos of punch-down tools and wiring blocks, to tips on installing Netware 2.2 and 3.11, the authors have it all. It's a practical consultant on a shelf, and I suspect it's going to result in a few less billable hours. It's even got a glossary of terms.

But if you want a truly encyclopedic compendium of network glosses, turn to Thro.

Thro's book is not your average Ovaltine decoder. She's put together a reference that would give Carson and McMahon hours of material. You know the routine: "Everything you ever wanted..." Not just terms, but NetWare commands are included. I've seen a lot of computer dictionaries over the years, but when I used them for reference, most fell short. I guarantee you, you'll find *The NetWare Decoder* on my bookshelf. Captain Midnight would have been proud. ■

RESOURCES:

MAUcard Plus (internal 10BaseT hub), $425
FlexiHub (modular 12-port hub), $500 (6-port) $700 (12-port) (FlexiHub price includes required octopus connector)
Pivotal Technologies
18240 Purdue Dr.
Saratoga, CA 95070
(408)374-7887

Peer-Hub (5+2-port concentrator), $399
Peer-Hub AUI Interface Kit (includes AE-3 NIC), $99
Artisoft, Inc.
575 E. River Rd.
Tucson, AZ 85704
(602)293-4000

DE-205TP Hub Ethernet Adapter, $495 (hub with Ethernet controller)
DE-205/4TP, $200 (adds four ports, up to twelve total)
DE-205/X, $150 (the DE-205/X adds one BNC and one AUI port, and can be used in addition to two DE-205/4TP daughter boards)
D-Link
5 Musick
Irvine, CA 92718
(714)455-1688

Hub-Card (4/8-port hub for PC/AT Bus), $395
Micro-Hub (4/8-port hub with coax connector), $449
4/8 Harmonica-style Expander Module, $69 (the harmonica can be used with either hub card to access its second set of four ports, or the user can punch down the extra lines)
Micro-Twist RJ-45 to AUI 10BaseT Transceiver, $69
Micro-Mau BNC to AUI Thinnet Transceiver, $89
MiLAN
67 E. Evelyn Ave., Ste. E
Mountain View, CA 94041
(415)968-9000

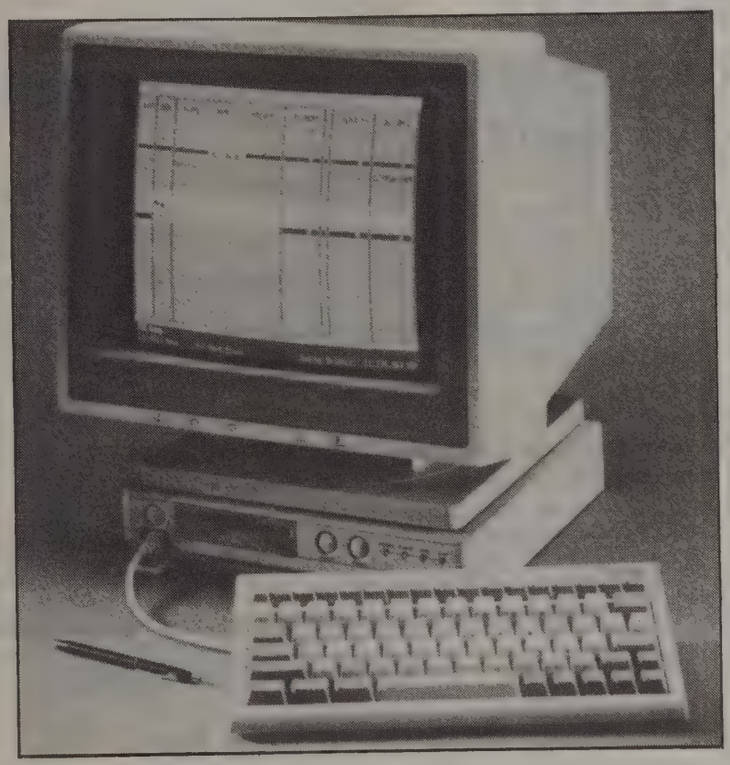
Farallon PhoneNET StarConnector EN, $149 ($1295, 10-pack)
Farallon
2000 Powell St., Ste. 600
Emeryville, CA 94608
(510)596-9100

Hublet
Shiva Corporation
One Cambridge Center
Cambridge, MA 01242
(617)252-6300

***Building Local Area Networks*, $29.95**
***The NetWare Decoder*, $26.95**
M&T Books
144 Borel Ave.
San Mateo, CA 94402
(415)358-9500

SlimPro Booksize Computer

The **AddTech** group proudly presents our new **SlimPro Booksize Computer System**. The affordably priced SlimPro is a small footprint basic desktop system designed as an alternative to a Notebook computer. SlimPro targets the user who wants to use the same system at home and in the office without the need to transfer data. For those with limited space, the SlimPro line provides a low cost/high performance solution. If you want the portability of a Notebook computer at the price of a desktop system, call AddTech today !



- ❑ **FCC Class "B"**
- ❑ Dimension 11.75"x10.75"x2.25"
- ❑ Only 8.1 pound fully-loaded
- ❑ Security LAN station
- ❑ POS computer
- ❑ X terminal emulation
- ❑ 2 16-bit add-on slots
- ❑ Low Cost Substitution For Notebook Computer
- ❑ 16MHz 286 or 25MHz 386SX
- ❑ Available with CPU, 1MB RAM (exp. to 4MB-286/16MB-386), IDE controller I/O 1P/2S, 1.44MB FDD and 1MB VGA card.
- ❑ Fits in a briefcase

List prices:

☆SlimPro 386 . . . . . $565
☆SlimPro 286 . . . . . $435

Also Available

❑ **Keyboards**
Mini keyboard
101-key keyboard

❑ **Monitors**
10" SVGA 1024x768 .26
14" SVGA 1024x768 .28
14" Standard VGA .39
12" Mono monitor
**** Please call for prices***

SlimPro Brings You
Low Cost !
Portability !

ADDTECH
Research Inc.

Northern California
Tel: (510) 623-7583
Fax: (510) 623-7538

Southern California
Tel: (818) 961-3494
Fax: (818) 330-6506

New Jersey
Tel: (908) 281-9759
Fax: (908) 281-9830

Further Musings On UNIX Mail

Do You Have To Sell Your Soul Just To Keep From Shooting Yourself In The Foot?

BY BENNETT FALK

UNIX

Things have changed.

Several months ago this space lamented the clunkiness of UNIX mail. The standard UNIX mail utility works perfectly well if you don't get many messages and if you can respond to messages as you receive them.

However, working with UNIX mail becomes unbearably awkward if you receive more than fifty mail messages daily and if the perfect response doesn't occur to you when you first read a message. Messages begin to accumulate in your system mail box, and as the list of unanswered messages grows, it becomes more difficult to process newly arrived mail.

For whatever reason, complaining about UNIX mail touched a more responsive chord among readers than any other column to appear in this space over the last six years. Many readers sent electronic mail, some to commiserate, some to share their favorite remedies for an all-too-common problem, and some to gloat that in sending a response they had made the burden of mail even more onerous.

Reading the responses, two things became readily apparent. First, compared with the mail my correspondents receive, the volume of mail I get each day is small potatoes: a busy system administrator may field more than two hundred messages in a day. In addition, none of the people who responded thought the standard UNIX mail program was adequate to handle this volume of mail.

And of course, there were recommendations. Various readers suggested alternative mail handling programs: "deliver," "mm," "MH," "mush," "ELM," and "PDM." These mail handlers are readily available to sites with access to USENET. Several readers proposed filtering incoming messages with ".forward" files to route the mail by various criteria.

The unfortunate thing about all these recommendations is that they required learning how to use yet another piece of software. Properly done, the learning process takes time, and in the short, dark days at the end of 1991, it seemed there wasn't time enough to read mail, let alone time to read documentation for a number of alternate mail handling programs. I persisted in using standard UNIX mail armed only with a few tricks to weed out obviously irrelevant messages.

Copyright © 1992 by Bennett Falk. All rights reserved. *Bennett Falk lives in the Bay Area, writes when he can, and hopes for the best. He works for Sybase, but the opinions and attitudes expressed are his own.*

A WINDOW OPENS

And then someone at work spoke highly (the word "spiffy" was used) of the mail tool packaged with OpenWindows from Sun. I was skeptical; the original Sunview mail tool is not a piece of software of which I am fond. The OpenWindows mail tool was indeed something different, however, and when it also turned out that OpenWindows was available on my workstation, I decided to check it out.

OpenWindows is Sun's product to bridge the cultural gap between Sunview (Sun's old, proprietary windowing interface) and more modern GUIs like Xwindows. OpenWindows is designed to allow Sunview and Xwindows applications to coexist peacefully on the same desktop.

The decision to try OpenWindows was not particularly rational; it was based chiefly on the assumption that OpenWindows would behave a lot like Xwindows and that I would be able to use the mail tool without reading the documentation. Any temptation to read the manual was eliminated when none of my coworkers could say where the manuals were, or which documentation might be of interest to the neophyte desiring only to replicate an existing Xwindows setup and read mail more efficiently.

It took about an hour of fiddling to adapt the Xwindows configuration files I use to OpenWindows. Once the windowing system started, I set right to work reading mail.

A busy system administrator may field more than two hundred messages in a day. None of the people I heard from thought the standard UNIX mail program was adequate to handle this volume of mail.

Even without documentation describing the use of the mail tool (I have since discovered the man page for it), I went through about fifty messages in the first session of mail-reading, taking only one-third of the time usually required.

When the time savings persisted over several weeks, it became important to figure out why this tool was so much better a vehicle for looking at mail.

THE OPENWINDOWS MAIL TOOL

On closer inspection, I discovered that the OpenWindows mail tool is not really an alternate mail handler at all; it simply provides a more convenient interface for using standard UNIX mail in a windowing environment.

It was something of a revelation that "user interface" had anything

DIRECT SALES!!! BEST PRICES BEST QUALITY
Manufacturer direct sale to End User

We've Manufactured High Quality Computers for 6 years, Now we set up a store to serve you better and you can take advantage of manufacturer direct prices!!

System Prices

1 year parts & labor warranty

486-33 MHz w/64K Cache $779

HD	No Monitor	Mono	VGA	Super VGA
200MB	$1437	$1517	$1665	$1725
120MB	$1165	$1288	$1395	$1455

386-40 MHz w/64K Cache $515

HD	No Monitor	Mono	VGA	Super VGA
200MB	$1127	$1227	$1357	$1417
120MB	$859	$959	$1089	$1149

386-33 MHz w/64K Cache $495

HD	No Monitor	Mono	VGA	Super VGA
120MB	$839	$939	$1069	$1129
40MB	$699	$799	$929	$989

386-25 MHz $455

HD	No Monitor	Mono	VGA	Super VGA
120MB	$809	$909	$1039	$1099
40MB	$658	$758	$899	$959

386SX-25 MHz $379

HD	No Monitor	Mono	VGA	Super VGA
120MB	$759	$848	$989	$1049
40MB	$608	$698	$849	$909

486/386/286 SYSTEMS INCLUDES:
***Motherboard & CPU/Basic Memory Installed (1MB)/IDE 2HD/2FD Controller/1.2MB or 1.44MB Floppy Drive/Internal Clock/Calendar/Math. Coprocessor Socket/2 Serial/1 Parallel /1 Game Ports/Case with Power Supply/101-Key KeyBoard**

486-33M 64/256K SYSTEM
*Basic System w/4MB
*130MB HD/ 2 Floppy Dr.
*Super VGA Card w/1MB
*14" SVGA Monitor (.28mm)
$1629/1679

486-25M 64/128K SYSTEM
*Basic System w/4MB
*130MB HD/ 2 Floppy Dr.
*Super VGA Card w/1MB
*14" SVGA Monitor (.28mm)
$1539/1579

386-40MHz 64K SYSTEM
*Basic System w/4MB
*130MB HD / 2 Floppy Dr.
*Super VGA Card w/512K
*14" SVGA Monitor (.28mm)
$1299

386-33MHz 64K SYSTEM
*Basic System w/4MB
*130MB HD / 2 Floppy Dr.
*Super VGA Card w/512K
*14" SVGA Monitor (.28mm)
$1279

386-25MHz SYSTEM
*Basic System w/4MB
*100MB HD / 2 Floppy Dr.
*Super VGA Card w/512K
*14" SVGA Monitor (.28mm)
$1195

386SX-25MHz SYSTEM
*Basic System w/2MB
*40MB HD w/ 2 Floppy Dr.
*Super VGA Card w/512K
*14" SVGA Monitor (.28mm)
$1045

MOTHERBOARD

286-12/16MHz	79/89
386SX-16 MHz	135
386SX-20 MHz	155
386SX-25 MHz	165
386-25MHz	229
386-33MHz 64K Cache	269
386-40MHz 64K Cache	299
486SX-20	535
486-25MHz 64KCache	569
486-33MHz 64K Cache	599
486-33MHz EISA 64K Cache	1239

MONITORS

Mono 14" Flat Screen	95
640X480 VGA Monitor (.52 dot)	195
Viewsonic 4	319
Viewsonic 6	369
Super VGA 1024x768 .28	270
14" VGA Non-Interlace	319
Sony 1304 Non-Interlace 1024x768	565
Nanao 9070U	889
Nanao 9080I	1028
NEC 3FGX 15" 1024x768 .28	629
NEC 4FG 15" 1024x768 .28	799
NEC 4DS 16" 1024x768 .28	979
NEC 5FG (17" 1280x1024 .31)	1619

DRIVES

1.2 Floppy Teac	58
1.44 Floppy Teac	58
40MB Teac IDE	215
52 MB Quantum IDE	245
80MB WD IDE	315
100MB NEC	325
120MB WD IDE	359
130MB Maxtor IDE	379
200MB Conner	595

ADD ON CARDS

Mono Graphic	15
Trident SVGA 1024x768 1MB	75
Trident SVGA 1024x768 512K	49
OAK SVGA 1024x768 512K	49
IDE W/2S/1P/1G Controller	23
AT I/O (2S/1P/1G)	18
Trang ET4000S 1280x1024 1MB	135
Prodesigner II w/1MB	179
Faxmaster 1200	265
2400 Modem	49
FaxModem 9600/2400	84
9600 Modem	395

KEYBOARD

101 keyboard Click	32
Keytronic 101 Keys	49
Mitsumi 101 Keys	44
Maxi 101 Keys	39

Ordering Information: Shipping & handling additional. C.O.D.orders over $500 add $10.00 special handling charge. All returns must have RMA# and must be in original packaging and include all warranty cards and manuals. Incomplete product returns, unauthorized returns and refused shipments are subject to 20% restocking charge. All prices are base on cash purchase. All prices and specifications are subject to change without notice.
VISA & MASTERCARD accepted.

GT COMPUTERS INC.
6217 Jarvis Av., Newark, CA 94560
OPEN Mon-Fri 9:00 - 6:30 , Sat 10:00 - 4:00
(510) 659-1002 Fax: (510)659-1309

Best Prices With Free Installation, Services & Delivery For Systems Only

We Offer

UNIX SOLUTIONS

SCO
THE SANTA CRUZ OPERATION
Authorized Reseller SCO UNIX

We're the leading UNIX consulting company. When it comes to UNIX nobody offers more than Ramcomp at guaranteed lowest prices! We offer the widest selection of UNIX system & application software.

UNIX SHOPPING MADE EASY

SCO UNIX OS (2 user)	$440	SCO Portfolio	470
SCO UNIX OS (3+)	664	SCO TCP/IP Dev Sys.	280
SCO UNIX Dev Sys	664	SCO TCP/IP RTS Unltd	440
SCO X Window Complete	470	SCO NFS	440
SCO X Windows RTS	280	SCO ODT Personal sys	670
SCO X Windows Dev	280	SCO ODT Server upg	989
SCO VP/1x Unltd (3+)	600	SCO ODT Dev sys	987
SCO MPX	664	SCO ODT (3+)	1630

Let us create an environment for your organization where Unix is a way of life, providing Multi-User, Multi-Tasking power of Unix as your solution. Our services include the following:

- Unix Installation
- Unix Technical Support & Advice
- Unix Complete Training
- Custom Software Development in Oracle & Foxplus

COMPUTERS

IBM, APPLE, COMPAQ, EVEREX, AST, SAMSUNG, ALR, TOSHIBA, NEC, PANASONIC AND COMPATIBLES

Call for Best Price and Configuration

Any Computer • Any Configuration

PLOTTERS

CalComp: 1023 A-D	$3675	Houstin Inst.: Dmp-61	$2975
1025 A-E	4775	Dmp-62	3495
1044 GT AE	9050		

IOLINE, ROLAND, HP ..... BEST PRICE CALL

LASER PRINTERS

NEC, HP, PANASONIC, TOSHIBA, QMS, QUME, APPLE

NEC Silentwriter ..... $1695 BEST PRICE

DIGITIZERS

Summa Sketch 12x12	$320	Kurta IS/ONE 12x12	$349
Summa Sketch 12x18	590	Kurta IS/ONE 12x17	595
Cal Comp 12x12	321		

MONITORS

Hitachi 19" Accuvue	$1699	Nanao 9070S	$990
NEC 5D 19"	1990	Nanao 9070U	1190
NEC 4D 4FG	750	Mitsubishi - All Models	CALL

We Carry All Other Models - Call For Lowest Prices

SOFTWARE

Call For Any Software

MEMORY

Call For Latest Prices On

SIMMS, SIPPS, DIPPS, DRAMS, MATH CO.

AMI 386-33 MHz MK IV 486-UPGRADE

- 4 MB Ram
- 80 MB HD, 1.2 MB FD
- VGA Card and Monitor

Lowest $995

- 386 SX
- 2 MB Memory
- 40 MB HD, 1.2 MH FD
- VGA Card and Monitor

Repair and upgrading, revamping on site for all computers
Minimum Charges

690 Market Street - Suite 515
San Francisco, CA 94104
Hours: Mon-Friday 9 A.M.-6 P.M.
Sat - Noon-5 P.M.

RAMCOMP
The Computer People...
415/986-5125 • Fax - (415) 986-3677

• BEST MEMORY PRICES • HIGHER QUALITY
• SAME DAY SHIPPING • FREE REPLACEMENT WARRANTY

SIMM'S

1x9-10	$34
1x9-80	36
1x9-70	37
1x9-60	38
1x8-80	34
1x8-70	35
1x8-60	36
4x9-60	142
4x9-70	135
4x9-80	128
4x8-70	128
4x8-80	118
256x9-80	10[99]
256x9-70	10[79]

DRAM'S

1x1-80	$3[99]
1x1-70	4[85]
1x1-60	4[79]
256x4-80	3[99]
256x4-70	4[85]
256x4-60	4[79]
256-70	1[85]
256-60	1[85]
4464-80	1[85]
4464-10	1[85]

CPU CHIPS

80386DX-16/20/25/33	CALL
80386SX-16/20	CALL
80486DX-25/33	CALL
80286-8/10 (PLCC)	$18/20
80286-12/16 (PLCC)	20
82385-20	60
82385-33	75
V-20-8	6[99]
V-20-10	10
V-30-10	10

AMD

80386 DX 40	CALL

MATH CO-PROCESSOR

INTEL

8087-5 MHz	$80
8087-2 8 MHz	116
8087-1 10 MHz	155
80287-6 6 MHz	89
80287-8 8 MHz	89
80287XL 12 MHz (Laptop)	105
80287-10 10 MHz	89
80C287-12 MHz	109
80387SX-16	130
80387SX-20	140
80387DX-20	185
80387DX-25	195
80387DX-33	195

WEITEK

3167-20 20 MHz	$300
3167-25 25 MHz	350
3167-33 33 MHz	400
4167-25 MHz	600
4167-33 MHz	700

CYRIX

83087-16 16 MHz	$145
83087-20 20 MHz	145
83087-25 25 MHz	145
83087-33 33 MHz	155
83SX87-16 16 MHz	100
83SX87-20 20 MHz	110

IIT

8C87-8	$69
8C287-10	79
8C287-12	89
287-20	99
8C387-20	130
8C387-25	132
8C387-33	140

AMD

80C287-10	$89
80C287-12	110

ULSI

US 83C87 16 MHz SX	$120
US 83C87 20 MHz SX	135
US 83C87 25 MHz	145
US 83C87 33 MHz	175

EPROMS

2764-200ns	$2[75]
27C64-200ns	3[99]
27128-200ns	3[99]
27128-150ns	5[99]
27256-200ns	3[99]
27C256-200ns	3[75]
27C512-200ns	6[99]
27C020-150ns	13[99]

1x4 4x1 STATIC

514402-80 (1x4) STT,ZIPP	CALL
514400-80 (1x4) ZIPP	CALL
514400-80 (1x4) DIPP	CALL
514400-80 (1x4) SOJ	CALL
514100-80 (4x1) SOJ	CALL

COMPAQ MEMORY

DeskPro 386/20e, 20, 35e, 25 286e	
1 MB Module	$125
4 MB Module	330
DeskPro 386/20e, 25e	
1-9 MB Exp Brd	225
4-12 MB Exp Brd	529
DeskPro 386s-16	
1 MB Module	125
4 MB Module	315
1-9 MB Exp Brd	225
4-12 MB Exp Brd	529
DeskPro 286N, 386N, 386SX/20	
2 MB Module	200
4 MB Module	545
DeskPro 386N, 386SX/20	
2 MB Module	225
DeskPro 286N, 386N	
0-4 MB Exp Board	115
DeskPro 386/33SL, 486/25, 486/33L System Pro	
2 MB Module	200
8 MB Module	900
32 MB Module	6000
DeskPro 386/16	
1 MB Kit	169
1 MB Exp Brd	398
2 MB Exp Brd	567
4 MB Kit	399
4 MB Exp Brd	799
8 MB Exp Brd	1199
Portable 386	
1 MB Kit	268
4 MB Exp Brd	775
4 MB Exp Brd	775
Portable LTE (8086)	
512K Module	140
Portable LTE/286	
1 MB Module	100
2 MB Module	150
4 MB Module	630
Portable SLT/286	
1 MB Module	190
4 MB Module	628
Portable SLT/386	
1 MB Module	250
2 MB Module	410
4 MB Module	819
Portable III	
512K Kit	98
2 MB Kit	218

IBM PS/2 MEMORY

Mdl 30/386, Exp Brd	
512K Kit	$54
2 MB Kit	175
Mdl 70-061; -121; 55SX; 65SX: Exp Brd	
1 MB Module	95
Mdls 70-061: E61: 121: 50Z, 55LS, 55SX: 65SX: P70:	
2 MB Module	179
Mdls 70-A21: A61, B21, B61	
2 MB Module	150
Mdls 55SX: 65SX: 55LS, 65LS	
4 MB Module	370
Mdls 80-111; 121, 311, 321	
2 MB Card	145
Mdls 80-A21; A31	
4 MB Card	220
Mdls 80-A21: A31	
4 MB Card	469
Mdls 90; 95	
2 MB Module	325
4 MB Module	630
Mdls 50 & 60	
2-8 MB Exp Brd.	529
Mdls 70 & 80	
2-8 MB Exp Brd	489
2-14 MB Exp Brd	500
4-16 MB Exp Brd	925
Adapter	
2 MB Module	285
PS/1 Home System	
512K Upgrade	110
2 MB Upgrade	215

TOSHIBA PORTABLE MEMORY

T1200XE	2 MB Card	$194
T1600	2 MB Card	194
T3100SX	2 MB Card	194
	4 MB Card	570
T3100e	512K Card	135
	2 MB Card	194
T3200SX	2 MB Card	194
	4 MB Card	570
T3200	3 MB Card	349
T1000SE; XE	1 MB Card	239
T5100	2 MB Card	194
T5200: 8500	2 MB Card	194

SCC SANTA CLARA
Component International

1630 Oakland Rd. • Suite A111 • San Jose, CA 95131
TEL: (408) 441-6100 Fax: (408) 441-0153 • Hours: M-F 8-5:30

BUSINESS SOLUTIONS

to do with the "mail problem." The assumption that the UNIX mail handler was inefficient because it lacked features was naive: the inefficiency could as easily be attributed to the single-threaded organization of features: UNIX mail is designed for a user sitting at a character-based terminal, and it forces the user to do one thing at a time.

A windowing mail handler on a workstation does not have to be limited in this way. The OpenWindows mail tool really *is* spiffy. The user may move freely from task to task, without having to complete one thing before starting another. Message headers can be scanned in one window, message text can be read in another, and outbound mail can be composed in any number of independent windows. (The mail tool provided by Sun is not the only mail program available for a windowing environment, the "MH" program recommended by several readers also exists in an Xwindows version.)

GREAT, BUT NOT PERFECT

After a few weeks, the euphoria over being able to read mail without fear began to wear off. Interestingly, achieving a reasonable user interface does not guarantee a product that is feature-rich in other respects.

In spite of the increased efficiency it offers, the OpenWindows mail tool has some feature deficiencies. It doesn't display folders and sub-directories of folders easily; it isn't particularly useful for working with groups of messages; and I have yet to figure out how to make vi the editor of choice for composing new mail messages.

In addition, the whole strategy of changing windowing systems just to get at a mail tool you can use without reading the manual is questionable at best. There are those who think user interface preferences are a matter of religious conviction, and taking up OpenWindows for the sake of the mail tool must look to them like selling your soul to keep from shooting yourself in the foot.

Religious beliefs aside, OpenWindows is also a resource-intensive system, and since I've converted to it, performance on my modestly configured workstation occasionally degrades unacceptably, and the operating system regularly bumps into the limits of its configuration. It is unsettling to discover that you have more than one foot in which to shoot yourself.

Still, it takes less time to read mail now, and it's just possible that I might be able to buy my soul back if I spend the free time virtuously. ■

LOWEST PRICES!!

BASIC SYSTEMS INCLUDE:

- 486/386/286 Motherboard
- 486/386/286 CPU
- 1 MB RAM
- Enhanced 101 Keyboard
- IDE Controller & I/O Card
- Teac 1.2 MB or 1.44 MB FDD
- Internal Clock/Calendar
- Math Co-Processor Socket
- Deluxe Case w/P.S.

286-12 $268

286-16 286

386SX-16 360

386SX-20 378

386DX-25 405
No Cache

386DX-33 418
No Cache

386DX-33 462
w/64K Cache

386DX-40 478
w/64K Cache

MADE IN USA
486DX-33 820
w/64K Cache

MADE IN USA
486DX-33 870
w/256K Cache

MADE IN USA
486DX-50 1215
w/64K Cache

SYSTEM	BASIC SYSTEM	BASIC +40 MB +MONO	BASIC +40 MB +VGA	BASIC +40 MB +SVGA	BASIC +80 MB +SVGA	BASIC +120 MB +SVGA
286-16	$286	$585	$699	$755	$855	$915
386SX-16	365	754	775	808	890	968
386SX-20/25	378	650	799	845	928	990
386-25	405	677	840	885	975	1045
386-33	418	698	865	905	995	1065
386-33/64C	462	742	900	945	1035	1125
386-40/64C	482	762	920	965	1055	1145
MADE IN U.S.A.	MADE IN U.S.A.					
486-33/64C	820	1108	1239	1295	1386	1450
486-33/256C	870	1140	1178	1318	1445	1578
486-50/64C	1215	1482	1625	1665	1750	1815

- AT I/O Card $15
- IDE 2FD/2HD 16
- DOS 5.0 49
- Agiler Mouse 22
- Window & Mouse 59
- TEAC 1.2 MB & TEAC 1.44 MB 60/56
- 2400 Fax Modem (w/MNP5) 49
- 9600/2400 Fax Modem (w/MNP5) 94
- Monitor 14" Color VGA 225
- Monitor 14" SVGA 1024x768 .39 dot (Arche) 245
- Monitor 14" SVGA 1024x768 .28 dot (Arche) 285
- Video Card Trident 1 MB/512K 78/55
- Orchid Pro IIs/ Fahrenheit w/1 MB ..... BEST
- Diamond Speed Star w/Hi Color ..... BEST
- Orchid Pro IIs w/Hi Color ..... BEST
- Sound Blaster 117
- Sound Blaster Pro 225
- Motherboard ..... BEST

PC CHOICES

2769 EL CAMINO REAL
(Corner of Bowers Between
San Tomas & Lawrence Exp)
SANTA CLARA, CA 95050

MasterCard VISA

(408) 248-8898

Fax: (408) 248-9998

Hours: MON-FRI: 10:30-6:30PM
SAT: 1-5PM
Prices Subject To Change W/O Notice

Enterprise Computing

Workstations Get Down To Business At SunSoft

BY MARY EISENHART

In recent years, Sun Microsystems has been promoting the concept "the network is the computer." For a real-life example, check out SunSoft president Ed Zander's SPARCstation.

Zander, who came to Sun in 1987 from Apollo, is a nineteen-year veteran of the computer industry. In a company with the cultural baggage of being of, by, and for UNIX wizards, Zander professes himself UNIX-illiterate—just like most of the people Sun considers its fastest-growing user base.

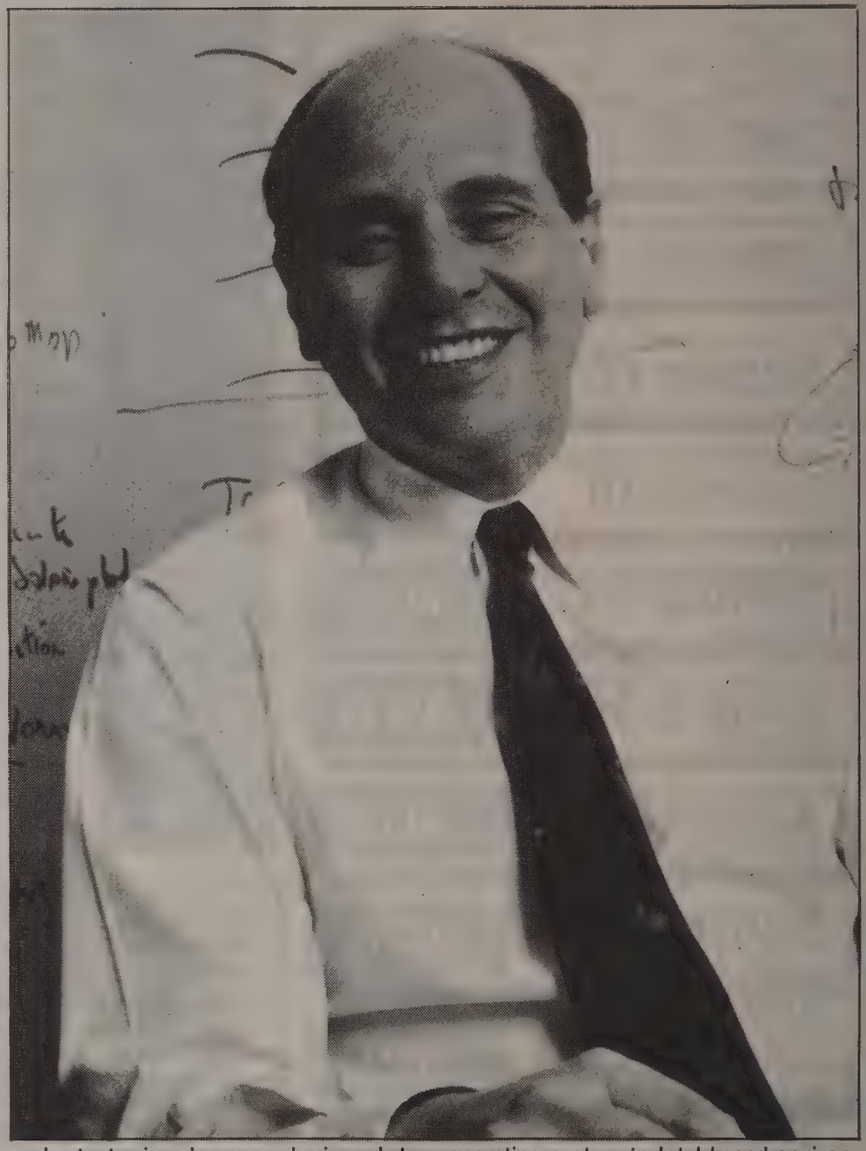
Zander comes in to work, types in his password, and up comes his desktop. The information and tools he uses in the course of doing his job appear in nice user-friendly windows—each one of which shows data that may be in a server in Zander's own building, elsewhere in the complex, or somewhere around the world.

"There are servers in this building," he explains. "There are servers all over these campuses. I don't know where anything is; all I know is that I come in in the morning, I hit one key, I enter my password, and this is what comes up."

Say he needs to schedule a meeting with Sun CEO Scott McNealy. McNealy's not in Zander's building. "I can go over the network to Scott's calendar. I can't change things on Scott's calendar, but if I say to my administrator, 'Set me up with Scott,' she can go into his calendar across the network and compare calendars. 'There's an opening at three o'clock; check with his admin and schedule appointments.'"

The world of enterprise-wide computing gets a lot more sophisticated than that, and Sun's making aggressive efforts to broaden its base in that world. Historically strong in technical markets, Sun's also become an entrenched supplier of corporate solutions. While leading PC vendors like Compaq have suffered from declining growth, Sun and other workstation vendors have prospered.

PHOTO: MICHAEL JAY



Last year, Sun made some structural and strategic changes designed to strengthen its position. McNealy announced that Sun Microsystems itself would be split into several autonomous companies, each focusing on a particular aspect of Sun's business. One of the companies was SunSoft, devoted to the development and marketing of Sun's operating system software.

And, in a historic announcement last fall, SunSoft announced its acquisition of leading Intel-based UNIX supplier Interactive (profiled in *MicroTimes* issue #85), and its intention, with the help of Interactive's technology, to port its Solaris operating system to Intel-based environments.

The industry has been inundated with announcements of impending operating systems designed to take advantage of current and future processors—Taligent, NeXTstep, Windows NT, etc. Until the announcement, Sun's Solaris operating system seemed tied exclusively to Sun's RISC-based SPARC processor line, and the prospect of Sun software moving into the vast clone marketplace raised at least as many questions as answers. So we went to visit Zander and ask some of those questions.

WE'VE MOVED! SEE BELOW FOR NEW LOCATION

Network works!

As your Networking Partner, we do more than give out good prices and deliver quality products. Our engineering team offers expert guidance on software, hardware and netware configuration and installation. Our total commitment to customer service means:

- Dependability by Design
- Minimum Downtime
- Maximum Performance/Price Ratio
- Data Security
- Reliable Technical Support

We listen to your needs. No job is too small or too big for us. Get a solid ROI – *Return on Investment* with the experts at COPO InfoSystems America. We deliver the ultimate solution!

Our satisfied customer list:

- City of San Jose
- First Charter Properties
- SCO UNIX
- Phillips AG
- San Francisco State University
- Stanford University
- Lawrence Livermore Laboratories
- Internal Revenue Service
- NCR/Portables
- Hayward Unified School District

and many others...

386, 386SX, 486 and 387 are registered trademarks of Intel Corp. Registered trademarks are recognized and belong to their respective companies. Information and prices are subject to change without prior notice. Not responsible for typographical errors.

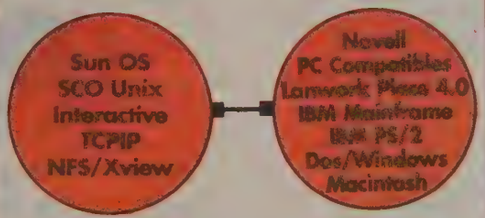
Special Offer for Dealer and Corporate Accounts Leasing Available

NEW LOCATION!

State of The Art Connectivity Copo Solution

Do you have a PC?
Do you have a MAC?
Do you have a Sun?
Do you have a UNIX Platform?

We give you the best of all Connectivities!



We'll Connect You!

SUN WORKSTATION

- 25MHz Sparc Workstation
- 8MB RAM
- 207 H/DD
- Sun OS 4.1.1
- Three S-Bus Slots for I/O
- Plug & Play Special

$4995

First 5 Workstations Sold Will Receive a FREE 19" Monochrome Monitor!

SCO UNIX

Operating Systems:	
SCO UNIX OS (1-2)	$420
SCO UNIX OS (3+)	$895
SCO UNIX DEV	$900
SCO XENIX Sys. V (1-2)	$499
SCO XENIX Sys. V (3+)	$649
SCO XENIX Dev	$561
Operating Environments:	
VP/ix (1-2)	$420
VP/ix (3+)	$699
MultiView 1	$280
Networking Communications:	
TCP/IP Run (UNIX) (1-2)	$279
TCP/IP Run (UNIX) (3+)	$490
TCP/IP Dev (UNIX)	$299
TCP/IP Run (XENIX) (1-2)	$279
TCP/IP Run (XENIX) (3+)	$490
TCP/IP Dev (XENIX)	$299
Network File System	$490

NETWARE

V.2.2		V.3.11	
5 Users	$548	5 Users	$722
10 Users	$1229	10 Users	$1527
50 Users	$2139	20 Users	$2138
100 Users	$3395	50 Users	$2299
		100 Users	$4280
		250 Users	$7650

Call For Novell Lite

OPEN DESKTOP

ODT - Personal Server	$990
ODT - Server Upgrade	$1144
ODT - Development	$1265

We are proud to be the Gold Authorized & Reseller of:

Novell Gold Authorized Reseller

SCO THE SANTA CRUZ OPERATION

OPEN DESKTOP The Complete Graphical Operating System

INTERACTIVE

COPO InfoSystems America

U.S Headquarters
1810 Old Oakland Road Ste. E, San Jose, CA 95131
Tel: 408/943-9007 Fax: 408/943-1004
Hours: 9-6 M-F (Sat. appt. only)

San Francisco Branch
1798 Grove Street, Ste. 4, San Francisco, CA 94117
Tel: 415/441-0459 (Appt. only)
Hours: 9-6 (Sat. appt. only)

Pleasanton Branch
6762 Calle Altamira, Pleasanton, CA 94566
Tel: 510/462-9739 (Appt. only)

History Marches On ...
... Kuwait Liberated ... Soviet Union Dissolved

COMPUEXPO '92 Las Vegas Announced!

Worldwide news deserves worldwide attention. And that's precisely what COMPUEXPO 92 is .... worldwide news! From September 21-24, 1992, the Las Vegas Convention Center will play host to the leaders of the Second 10 Years of the Personal Computer Revolution.

Welcome to the New World Order of PC's!

The Global OEM Showcase...

COMPUEXPO is the Global OEM Showcase for today's fast moving, price-competitive, high volume PC industry. Serving the procurement needs of the PC direct marketers, system integrators, superstores, superVARS and in-house corporate MIS departments, COMPUEXPO will bring together the hottest technologists and manufacturers of the Pacific Rim and the US high tech community with the new marketing channels of the Second 10 Years of the PC Revolution. That's right .... Under one roof East meets West Face to Face!

20,000 Forecasted Attendees

And for our 20,000 forecasted attendees, the benefits speak for themselves. The premier new product announcements 2 MONTHS EARLY this year. Just in time for the fall sales offensive. No more expensive trips to the Far East to negotiate pricing on the hottest systems, boards, peripherals .... Just one simple trip to Las Vegas! And if you need to market test your new products prior to that "other industry trade show", COMPUEXPO is the place to do it!

Products on Display at COMPUEXPO

- **486/486SX/386/386SX/286 SYSTEMS**
  DESKTOP OFFICE SYSTEMS... NOTEBOOKS... MODULAR UPGRADEABLE SYSTEMS... DISKLESS NETWORK PC'S ...FILE SERVERS... MULTIUSER SYSTEMS ... MULTIPROCESSOR SYSTEMS... INDUSTRIAL PC'S... CAD WORKSTATIONS... PEN COMPUTING SOLUTIONS . . HANDHELD PALMTOP UNITS .... AND MORE !
- **STATE OF THE ART BOARD LEVEL PRODUCTS**
  MAINBOARDS FROM 50MHZ 486 INTEL EISA TO 25MHZ AMD 386SX SINGLE CHIP SOLUTIONS... ALL MAJOR CHIPSET-BASED PRODUCTS REPRESENTED... HIGH RESOLUTION SUPER VGA GRAPHICS BOARDS... EISA BUS MASTERING PRODUCTS... MODULAR PC BOARDSETS... WINDOWS ACCELERATORS... AND MORE !
- **NETWORKING AND COMMUNICATIONS**
  ETHERNET LAN CARDS... ARCNET CARDS... MAINFRAME COMMUNICATIONS CARDS... FAX BOARDS... TERMINAL EMULATORS... BRIDGES AND ROUTERS... GATEWAYS... CABLING... MODEMS... VOICE PROCESSING... AND MORE !
- **STORAGE PRODUCTS AND PERIPHERALS**
  ESDI/SCSI/IDE HARD DISK TECHNOLOGY... OPTICAL DRIVES... CD ROM... TAPE SUBSYSTEMS ... FLOPPY DRIVES... REMOVABLE DRIVES... LASER PRINTERS... INKJET PRINTER... DOT MATRIX PRINTERS... SCANNERS . . MICE . . DIGITIZERS . . PEN INPUT . . BAR CODE READER . . JOYSTICKS . . KEYBOARDS . . PLOTTERS . .MONITORS AND DISPLAY SUBSYSTEMS . . MULTIMEDIA . . TERMINALS . . AND MORE!

COMPUEXPO
The Global OEM Showcase

September 21-24, 1992
Las Vegas Convention Center
Las Vegas, Nevada, USA

For additional information on Exhibiting, please call 1-800-822-1229

Produced by
UNSC Investment Group, Inc.
Tel: (510) 657-3418
Fax: (510) 657-3499

Co-sponsored
MICROTIMES
The World Journal
and
Computer Buyer's Guide & Handbook

West USA & West Canada Office:	East, Middle West USA & East Canada Office:	Taipei, Taiwan ROC Sales Office:	Hongkong & China Sales Office:
Tel: (510) 657-3418	Tel: (617) 769-8950	Tel: (02) 776-4249	Tel: 7952826-7
Fax: (510) 657-3499	Fax: (617) 769-8982	Fax: (02) 776-4410	Fax: 7965291

REPLY TODAY AND SAVE!

Sign up today to receive more information on COMPUEXPO '92. Save $15.00 of the regular admission price $35 by Mailing, Fax or calling us today!

Mail to: UNSC Investment Group
39899 Balentine Drive, Suite 305,
Newark, CA 94560, USA
Fax #: (510) 657-3499
Toll Free: 1-800-822-1229

- ❑ Send Exhibitor Information
- ❑ Send Attendee Information
- ❑ Yes, I plan to attend COMPUEXPO, please mail my pre-registration form with hotel and travel information. I understand I save $15.00 off the normal registration fee $35.
- ❑ Please fax me a pre-registration form.

Name _____ ❑Mr. ❑Mrs. ❑Ms.

Company _____ Title _____

Company Street Address _____

City _____ State _____ Zip _____

Phone _____ FAX# _____

"Sun is always thought of as a computer company, a workstation company. But in some respects it's software that's sold the hardware, in that you've got to use these things and we have a very powerful UNIX environment."

Why did Sun split into multiple companies, with SunSoft being one of them?

I think it's a sign of the times, companies getting a better handle on their investments, their technologies, and their business focuses. Breaking up what we call the big wad of company into smaller, manageable businesses that reflect the core competency.

It's not unique. IBM's doing it now. DEC's started doing it. All these companies are starting to say, "What is this thing I have as a business? If software's important, let's manage that at a very senior level. Let's get a business focus, a financial focus, a competitive focus, a product focus, on that thing. If it's computers, let's look at computers. If it's service, let's look at service."

I think Scott and the management team were becoming increasingly concerned that we don't fall into what IBM and DEC and Hewlett-Packard got themselves into, which was this big wad of a company where you didn't know why you were doing some of the things you were doing, or how to compete effectively in the '90s.

It's a method, internally, of how to measure ourselves a lot better. Externally, it's a focus on competition and key strategies. You could have cut it ten different ways; this is just the way he and the team decided to cut it at this time.

So what is SunSoft's mission?

Sun is always thought of as a computer company, a workstation company. But in some respects it's software that's sold the hardware, in that you've got to use these things and we have a very powerful UNIX environment.

Our goal is to make sure we continue to build the best technology for the computer company, so that means great software products in the system software area. But also, the goal is to capture as many applications and as much volume as possible on that platform, to finance the investment in technology. That means to port it to other SPARC platforms, and the Intel platform, to try to create a broader market appeal for our system.

Historically you've been really strong in the UNIX world, particularly in technical and scientific areas, and also in the corporate world with high-end database servers. It seems that your current strategy is a lot broader than that.

Well, people hear the word "Intel" and they think of your PCs and home, and your kids. The problem with the word "Intel" is that there's a hundred million PCs out there, and they have a very broad range of usage.

You described our market very well. I think it's more a matter of broadening horizontally than vertically. What I mean by that is, if we were in technical areas before, we're now more in commercial areas that appreciate the technology and want to do client-server computing.

We're not after the DOS/Windows-let's-run-a-Lotus-spreadsheet-on-the-desk market by any means. We're after Fortune companies that want to really downsize off of their mainframes and minicomputers, upsize off of their PCs into client-server 32-bit computing to run their business.

You've got to be really careful—we announce "Intel" and they think we're going to sell it to children.

The question does come up—is the guy sitting there playing games on his XT your target user?

No. Not at all. There are multiple different instruction sets that people buy, just as they buy cars. People buy Chevys or Fords or whatever, but they all run on gasoline. We want to pick the most popular cars—in this case, it's SPARC, which has the volume in the RISC marketplace, and Intel, which has the volume in the CISC marketplace. We want to run our environment on it.

Just as multiple cars operate on the same highways, if you walk into General Motors or an oil company or an insurance company or an airline company or a financial company, there's high-end PCs there, workstations there. They're connected, they're running different parts of the business. So we wanted to apply the same application environment to the client-server model.

There are many different flavors of UNIX. As an operating environment, what advantages does Solaris offer, other than the fact that it runs on Sun hardware?

The best way I can describe it is that it's industrial-strength UNIX. We have ten years and half a million installations. We've pounded that thing, and we think it's the most reliable, most well tested, most quality product around.

There are technical features like multiprocessing capability and security and administration and internationalization and ease of use, but the bottom line is that I think it's the best integrated quality industrial-strength implementation of the UNIX operating system in the marketplace today.

Those who have used SunOS in the past versus other UNIXes say it's like night and day. So we're going to build our success on our knowledge of UNIX and our reputation for building great product.

Clearly you wouldn't be interested in having your software running on Intel platforms if you didn't perceive a market to be there. Who do you perceive that market to be, and how are its needs not being met by, say, SCO?

SCO has traditionally approached what we call the small business marketplace—timesharing, very small businesses that run accounting packages, etc. That may still be a business; it's not necessarily our target focus.

We address large enterprise computing. That's been our business, that's where we're going to continue to stay for a while. In those large enterprises, there are people who have bought a lot of RISC workstations and have used products like Solaris to do their job—to design planes, or to run their financial trading workstations down at Solomon. There are just countless numbers of applications today that are heavy-duty, industrial-strength applications.

As Intel upscales its instruction set for more power, people are building some very demanding 486-based, multiprocessor-based Intel machines—servers and clients—and they need an operating system to run. They can't run DOS and Windows on a 486, it just doesn't do anything. You need multitasking, you need networking, you need multiprocessing.

Actually, the Intel thing was kind of reversed. More people approached us than SunSoft approached them. We had some PC companies, companies like Dell and others, that came to us and said, "Can we get SunOS or Solaris to run on either our existing or our

"We had end-users, large companies that were buying RISC workstations and servers that had high-powered Intel machines, and said, 'Gee, it would be nice to run the same platform across Intel and SPARC in a client-server operation.'"

forthcoming hardware?"

And then we had end-users, large companies that were buying RISC workstations and servers that had high-powered Intel machines, and said, "Gee, it would be nice to run the same platform across Intel and SPARC in a client-server operation."

It's the higher end of the market. If you believe Intel, they're shipping two million units of 486s a year. There's people building real live product on 486s and MPs, and they just don't have the gasoline to run the thing. DOS/Windows is just underpowered.

It's like putting a Porsche engine in a Volkswagen. You just don't have the right match there of technology base. You can go with OS/2, which is IBM. You can wait for Windows NT. Or you can get a UNIX product, which is what a lot of people want today. That's what I think you're seeing now—we started it, and now everybody's porting UNIX. There's the NeXTstep announcements, there's the AIX announcements, Taligent... Everybody wants to provide a robust, next-generation system software environment to run on these new forthcoming higher-end, industrial-strength, Intel-based platforms.

The problem with the world—the consultants, the press—is that they haven't been able to segment the Intel marketplace. There's still this thing called PCs. The analysts still think of the word "PC." That's five thousand bucks on my desk [a SPARCstation]—what's the difference between that and if I go down to Fry's Electronics and pay five or six or seven thousand dollars for a 486 machine?

It's network-based client-server computing, and whether it's Intel plugged in there, or SPARC plugged in there, or Mips plugged in there, or HP plugged in there, or IBM Powerchip plugged in there is irrelevant, as long as the relevant volume's associated with who's buying what. We just want to provide a great environment for people to run applications.

Historically Sun's been much stronger in some applications than others—wonderful technical and scientific stuff, and very powerful databases. But there's no parallel to a PC user's ability to choose among twenty packages that perform the same task. So you get Bill Gates up there saying there aren't any applications for UNIX.

That's not our business. You don't buy UNIX to run spreadsheets or word processors. I wouldn't—I'd go out and buy a 286. Five hundred dollars and I could have a word processor.

You buy these things [workstations] on your desk when you want to run your business. If you're a design engineer at Ford, you want to design planes. If you're a financial trader at Solomon Brothers, you want to do financial trading. If you're in an insurance company, you're doing actuarial analysis or something like that. You do your job at your desk. Managers are doing their jobs at their desk.

Now I use productivity tools. I need a calendar. I need a mail system. I need a spreadsheet for my budget. I need a word processor.

The strategy has been twofold. One is, we have encouraged the major guys to port. You don't get anything by porting WordPerfect, dBASE, Lotus, which are 1983–85 products. They don't do anything more on UNIX than they did on PC. They may run faster. They may run in a window in multitasking. We just did them so people could have the major productivity tools to run native. So you can get dBASE, Lotus, WordPerfect, Frame, Interleaf, Aldus, and a whole host of other PC apps. You can run them. But our goal is not to encourage the twenty thousand single-tasking, limited productivity apps to go port.

We also have on Solaris what we call a DOS and Windows emulation mode, so you can bring up DOS/Windows or DOS in a window, and you can run those twenty thousand applications. Solaris on Intel is the same product as Solaris on SPARC, but in each of those environments you'll have a Windows environment where you can just double-click on an icon and up will pop Windows.

We will never have as many applications as in the PC space. I wouldn't ever give my kids Solaris to go run a game.

The strategy is very simple—to go look for client-server applications. We're more interested, to be honest with you, in Lotus Notes than we are in the Lotus 1983 spreadsheet. Because Notes takes advantage of the networking, client-server computing. Where Notes is being sold today is in Fortune accounts doing client-server workgroup computing. That is the strength of what Solaris sells.

The way you come to PC productivity is *a)* you get the native guys to port, and *b)* you get the PC and DOS/Windows emulation capability under UNIX and bring across those apps.

The real problem with the market is that everybody's trying to homogenize the market so there's only one solution for everything. There's never one of anything. We have a philosophy here at Sun that says there's never one answer.

There's not one instruction set, there's not one bus, and there won't be one OS. Some people buy Lexuses, some people buy Chevrolets; some people rent from Hertz, some people rent from Avis; some people go to McDonald's, some people go to Burger King. Depending on what you need to do your job, Solaris will fit a class of customers. A class of customers that's more enterprise-wide, industrial-strength Fortune accounts that are really tired of their VAX machines, tired of their mainframe machines. They're downsizing into a workstation client-server model.

DOS and Windows on low-end PCs will continue to flourish, will continue to have tremendous demand for people that really want to run their productivity applications, small local area networks of users, small businesses that need publishing, for example.

Or in large accounts, like here. We have some financial people that have a Lotus spreadsheet and use Windows in a dedicated office by themselves. It's heterogeneous more than homogeneous.

People always try to say there's only going to be one answer, and the answer is in Redmond, Washington. And it isn't. I do not deny that it's incredible volume that [Microsoft]'s attaining, but I just point out to the press all the time that there are a lot of other companies that are doing quite well. Some of the most successful recent stock offerings—Frame, Synopsys—are all UNIX-based companies.

Sun's doing very well. Hewlett-Packard is doing well. Silicon Graphics is doing well. Sybase's public offering went well. Oracle's doing very well, much of it attributed to UNIX. Informix is doing great, and a lot of their business is in UNIX. So there are com-

MD TECHNOLOGY, INC.

HIGHEST QUALITY · FASTEST SERVICES · BEST PRICES

5 YEARS LABOR & 1 YEAR PARTS WARRANTY

30 DAYS MONEY BACK GUARANTEE

MD - B486

- 80486 33MHz or 50MHz Processor
- 64K Cache RAM
- 1.2 MB Floppy Drive Teac
- Video Caching and Shadowing
- 1 Parallel, 2 Serials, 1 Game Port
- 101 Keys Keyboard
- Baby AT Case + 200 Watts P.S.
- Custom Configuration Available

Made In USA

33 MHz **$ 722**

50 MHz **$ 1148**

MD - B386

- 80386 33MHz or 40MHz Processor
- 64K Cache RAM
- 1.2 MB Floppy Drive Teac
- Video Caching and Shadowing
- 1 Parallel, 2 Serials, 1 Game Port
- 101 Keys Keyboard
- Baby AT Case + 200 Watts P.S.
- Custom Configuration Available

Made In USA

33 MHz **$ 448**

40 MHz **$ 468**

MD - B386

- 80386 25MHz Processor
- Without or with 64K Cache
- 1.2 MB Floppy Drive Teac
- Video Caching and Shadowing
- 1 Parallel, 2 Serials, 1 Game Port
- 101 Keys Keyboard
- Baby AT Case + 200 Watts P.S.
- Custom Configuration Available

Made In USA

w/out Cache **$ 388**

w/ 64K Cache **$ 428**

MD - B386sx

- 80386sx 16MHz or 25MHz Processor
- Without Cache
- 1.2 MB Floppy Drive Teac
- Video Caching and Shadowing
- 1 Parallel, 2 Serials, 1 Game Port
- 101 Keys Keyboard
- Baby AT Case + 200 Watts P.S.
- Custom Configuration Available

Made In USA

16 MHz **$ 308**

25 MHz **$ 338**

486 / 386 Complete System

Include

- Motherboard & CPU
- 1.2Mb & 1.44Mb Floppy Drives
- 4 MB RAM installed
- Super VGA Trident w/ 1MG
- Super VGA Monitor .28
- 2S, 1P, 1G Ports
- Math Coprocessor Socket
- AT Case + 200W P.S.
- IDDE 1:1 2HD / 2FD Controller
- 80 MB Hard Disk
- 101 Key Enhanced Keyboard

MD - 486 -50MHz
1.2 & 1.44 + 4 Mb + SVGA .28 + 80 MB **$ 1969**

MD - 486 -33MHz
1.2 & 1.44 + 4 Mb + SVGA .28 + 80 MB **$ 1539**

MD - 386 -40MHz
1.2 & 1.44 + 4 Mb + SVGA .28 + 80 MB **$ 1289**

MD - 386 -33MHz
1.2 & 1.44 + 4 Mb + SVGA .28 + 80 MB **$ 1269**

MD - 386 -25MHz
1.2 & 1.44 + 4 Mb + SVGA .28 + 80 MB **$ 1199**

MD - 386 -16MHz
1.2 & 1.44 + 4 Mb + SVGA .28 + 80 MB **$ 1129**

80486, 80386, 80386sx are trademarks of Intel
Prices Subject To Change without Notice.

All Other Products and brand names are trademarks of their respective companies.

FINANCING AVAILABLE

MOTHERBOARD w/CPU

- MB 386sx16MHz — $ 143
- MB 386sx25MHz — $ 158
- MB 386-25MHz — $ 223
- MB 386-25MHz w/ 64K Cache — $ 268
- MB 386-33MHz w/ 64K Cache — $ 278
- MB 386-40MHz w/ 64K Cache — $ 298
- MB 386-33MHz w/ Cache — $ 578
- MB 386-25MHz w/ 64K Cache LOCAL BUS — $ 718

KEYBOARDS

- Keyboard 101 BTC — $ 20
- Keyboard 101 MNB Click — $ 45
- Keyboard Keytronic — $ 45

PRINTERS

- STAR 9 pins dot matrix — $ 145
- STAR 24 pins dot matrix — $ 269
- Printer Cable — $ 3.95

HARD DISK & FLOPPY DRIVE

- 40MB / 28ms or 52 MB / 17 ms — $ 185 / $ 215
- 80MB / 18ms or 100MB / 18 ms — $ 269
- 120MB / 18ms or 130MB / 15ms — $ 345 / $ 355
- 213MB / 16ms or 240MB / 15ms — $ 545 / $ 625
- 100MB ESDI / 18ms — $ 305
- 180MB ESDI / 16ms — $ 505
- FD 1.2Mb (Teac) — $ 55
- FD 1.44Mb (Teac) — $ 55

SVGA CARD

- MGP Card — $ 15
- SVGA Card w/ 512Kb — $ 45
- Trident SVGA w/ 1Mb — $ 78
- Diamond Speed Star Plus w/ 1Mb — $ 145
- Diamond Speed Star Plus Hi-Color w/ 1Mb — $ 175
- Diamond Stealth VRAM w/ 1Mb — $ 295
- MD SVGA Fx Hi-Color w/ 1Mb — $ 145
- MD S3 Turbo Windows Accelerator — $ 245
- Orchid Pro Designer IIs w/ 1Mb — $ 165
- Orchid Pro IIs w/ 1Mb (w/ 32.768 Colors) — $ 185
- Orchid Farabelth w/ 1Mb (w/32.768 Colors) — $ 275

MONITOR

- 14" Mono Flatscreen — $ 95
- 14" Mini Micro SVGA (1024x768) .41mm — $ 235
- 14" Mini Micro SVGA (1024x768) .39mm — $ 250
- 14" Mini Micro SVGA (1024x768) .28mm — $ 285
- 14" Club AT (1024x768) .28mm Interlaced — $ 345
- 14" Club AT (1024x768) Non - Interlaced — $ 385
- 14" Sony 1304HG / 1604 — $ 555 / $ 995
- 16" Nanao 9070U / 9080I — $ 898 / $ 1025

INTERFACE CARDS

- DTC 7287 MFM Controller — $ 65
- DTC 7280 RLL Controller — $ 65
- DTC SCSI Controller — $ 125
- Adaptec 1542 BK — $ 285
- IDE Controller — $ 15
- IDE Controller w/2s, 1p, 1g — $ 25
- IDE Everex Controller — $ 35
- IDT DTK Controller — $ 45
- Ultrastor ESDI w/32k Cache — $ 168
- AT I/O 2s, 1p, 1g — $ 15
- Printer Card — $ 15
- Serial Card — $ 15
- Game Card — $ 15

ACCESSORIES

- Modem 2400 Baud Rate — $ 45
- Modem 2400 & Fax 9600 — $ 78
- Modem 9600 Baud Rate — $ 295
- Modem 9600 + Fax 9600 V. 32 & V. 42 — $ 345
- Sound Blaster — $ 115
- Sound Blaster Pro — $ 195
- Windows 3.0 — $ 45
- MS-DOS 5.0 — $ 45
- DR-DOS 6.0 — $ 45
- Microsoft Mouse Compatible — $ 15
- Logitech First Mouse — $ 39
- Logitech Kids Mouse — $ 45
- Logitech Track Man Mouse — $ 69
- Microsoft Mouse — $ 77
- System Stand — $ 6.95
- Printer Stand — $ 2.95
- Mini Desktop Case + Power Supply 200W — $ 55
- Mini Tower Case + Power Supply 200W — $ 65
- Medium Tower Case + Power Supply 200W — $ 99
- Full Size Tower Case + Power Supply 230W — $ 125
- Power Center — $ 19
- Keyboard Drawer (under Table) — $ 18

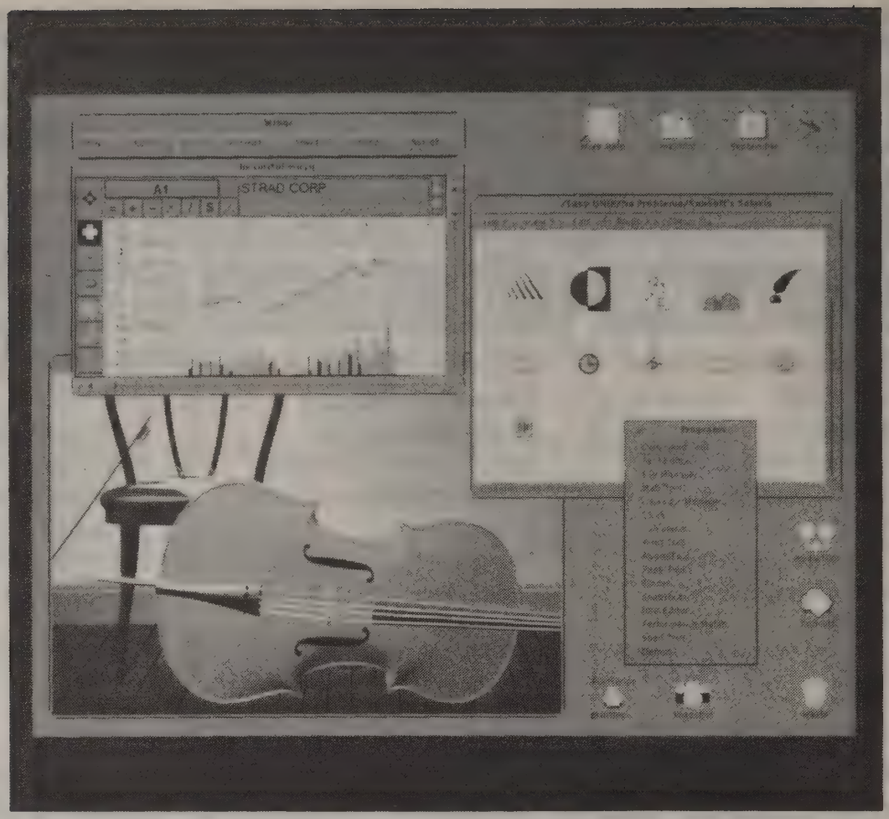
MD TECHNOLOGY, INC.

115 N. FOURTH STREET., STE 112 . SAN JOSE, CA 95112

Tel. (408) 971-3615 * Fax. (408) 971-0650

OPEN 7 DAYS A WEEK

VISA
MASTERCARD
WELCOME



Beyond the command-line interface—the look and feel of Sun's UNIX of today

panies that appreciate client-server UNIX-based workgroup computing solutions, mostly in large companies.

Also there are a lot of PC companies that are doing extremely well. Microsoft is doing extremely well. Some of the clone companies are doing very well. Apple's beginning to do much better. There are different classes of computing solutions that we go after. We're just trying to target what we think is a big niche in Fortune enterprise-wide computing.

"Enterprise-wide computing" and "workgroup computing" and "client-server architecture" are major buzzwords, and when you try to pin people down as to what they mean in specific contexts, you get a lot more buzzwords sometimes. Obviously you're coming from a context of solving real problems for real clients; what do these words mean in the world you're operating in?

I guess you've got to look at the '60s, '70s, '80s, and '90s. I don't want to go through a history course...

"First there was the Altair..."

No, before that there was the IBM mainframe. Remember, you gave a punched deck to an IBM mainframe, and you didn't see it again; two days later you came back and got your answer. That was the computing model in the '60s, the batch.

And then DEC got brilliant in the late '60s, and figured out "Gosh, if we could build a smaller machine and give access to users, through dumb terminals, to a departmental machine, we could offload that mainframe and get better access and better sharing of information."

That was timesharing and the birth of the minicomputer days in the '70s. Instead of a mainframe sitting somewhere that I hand a deck to, I now had in this building right here a big machine. I had a dumb terminal at my desk; I accessed it, and I'd be able to communicate with you and other people, but in a very limited fashion. Because it was one CPU, multiple dumb users. That was timesharing, and the '70s were the boom days for that, because it was "Wow! I can now get computing more localized for my needs."

Two things happened in the late '70s. One is that Steve Jobs and other people said, "Gee, if I could give every individual his own computer cheap, I could make him more productive, or creative, or whatever." But he basically didn't pay attention to the sharing problem, or the corporate problem. He wanted you to take one home and be more productive.

At the same time, companies like Apollo and Sun got going and said, "Gee, timesharing's nice, but I want to give everybody their own computer and maintain that corporate-wide, network-wide sharing." And that's workstations. The workstation industry grew up in the early '80s, and paralleled the PC industry. Both of them really took off in that decade.

What we're doing in the '90s is kind of refining those two parallels of the '80s. Client-server means that you take your databases, your information, off of your big machine, and put them on what you call servers. Black boxes. Small servers in one building, big servers in other buildings, departmental servers in other buildings. Geographically dispersed across continents. You give everybody his or her own computer, effectively, but you network them. That's the last key word, the networking.

So I'm sitting here today, for example. There's twelve thousand people at Sun. I can access any of those employees anywhere in the world via mail, via Calendar Manager. I can send information and documents across the network. I can basically access databases anywhere in the world. I don't even know where my OS is. I don't know where any of my data is.

It's giving me corporate-wide resources so I can do my job better. To maintain that timesharing, yet give me the power of a multitasking workstation.

So client-server is—I'm a client, you're a client, she's a client. And somewhere there's the power of the databases, the communications, the technology that allows us all to operate in a twelve or twenty or fifty thousand-person company.

The PC industry, with Novell networks, started to do what you call local area networks. Let's say the four of us were in this little area here; we may have a little PC server with a Novell network, and we just communicate among ourselves, right? The way we've approached it in the workstation world is with wide area networks, which means we take it a step further. Sun Microsystems itself is probably the largest implementation of client-server computing in the world—probably twenty-four thousand machines, and probably two to three thousand of those are servers. They're connected from about eighty offices worldwide.

You can do, not just mail, a lot of things. I can take a Lotus spreadsheet and merge it with a Frame document across the world. Sun runs its business on client-server computing, and that's where Fortune 500 companies are going.

"Enterprise-wide" to me is when you start to solve real live complex problems of enterprises. As opposed to local area issues, where you might take a room of thirty people that work in one department, say accounts payable, and they have a little database and a little Intel server there, and they run a little local area network among themselves and they do their job.

So they're converging. What's happening is the Intel world—Windows, DOS, Novell, and those 486s and Windows NT—is starting to move into the enterprise world. We have scaled down the technology in cost—we have taken the technical orientation, the very high-priced workstations, very high-priced client-server, and brought the price of that down. And it's becoming very confusing. It's very merged.

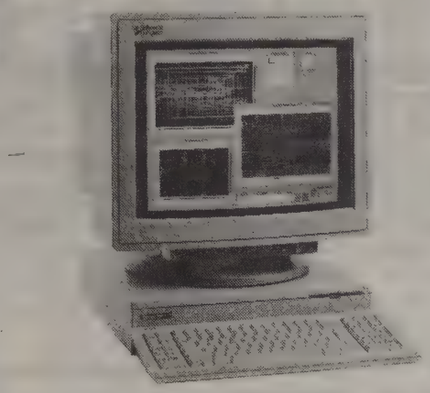
People don't understand this, but if you talked to our other side, the hardware company, probably seven out of every ten deals they get are commercial. The real growth on the computer company side is commercial

WE SELL QUALITY, RELIABILITY, SERVICE, & TECHNOLOGY!!

** SOLBOURNE SPARC WORKSTATION ** (25.5 MIPS, 1.7 DP MFLOPS, 13.3 SPECmark)

SUN Sparc Compatible, 64-bit Sparc CPU with Integral FPU, 8KB Internal Cache, 16MB RAM (up to 104MB), Sync SCSI Controller, 2 RS-423A I/O Ports, 15-pin Ethernet Port, Desktop Case, Keyboard, Mouse, 1.44 MB Floppy Drive, 200 MB Hard Drive, 16" Color Monitor.

Included Software:
Solbourne OS/MP (derived from SUN OS), C Compiler, NFS, TCP/IP, Open Network Computing, Pixrect Graphics Library, SUN CGI, SUN Core, Transcript, SunView, X11 (with PEX, 1152x900 Resolution), Solbourne X Window Manager (support both Motif & Open Look), Object Interface Library (X Window toolkit)

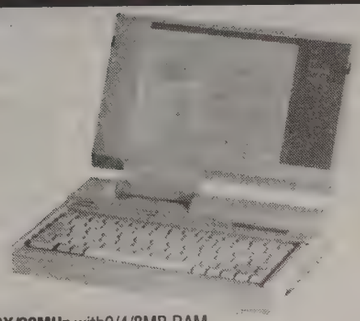


$5995

** X TERMINAL/SERVER **

Samsung 19" Mono/17" Color	$1869/2395
Arche X5800 X Terminal 14/17" Color Monitor	1795/1995
X Server Software for DOS PCs	495

** NOTEBOOK COMPUTER ** w/FREE POCKET MODEM



386SX/20MHz with2/4/8MB RAM, 1.44 MB FD, 40/60/80/120 MB	$BEST
386DX/33MHz with4/8/16MB RAM, 1.44 MB FD, 80/120/170/200 MB HD	$BEST
486DX/33MHz with 4/8/16MB RAM, 1.44 MB FD, 80/120/170/200 MB HD	$SOON

*** UNIX FOR PC FAMILY ***

SCO UNIX/XENIX:

SCO Open Desktop Personal (Diskette/Tab)	$660
SCO Open Desktop Server Upgrade	975
SCO Open Desktop Development System	975
SCO UNIX (2 User)	395
SCO UNIX OS (3+ Users)	655
SCO UNIX Development	655
SCO XENIX OS (1-2 Users)	395
SCO XENIX OS (3+ Users)	555
SCO VP/ix (3+ Users)	595
UNIX System V Rel 4 Complete Set	**595**

ESIX UNIX V Rel 4:

Standard System 2-User License w/Dos	$590
Standard System Unlimited License w/DOC	895
Development System 2-User License w/DOC	1100
Development System Unlimited License w/DOC	1440
ESIX Graphics I/(Open Look) or II(motif) w/DOC	276

UHC UNIX V Rel 4:

User Environment 2 User	$590
User Environment Multi-User Upgrade	335
User Environment Network/Open Look/Motif Options (1/2/all options)	250/420/590
Developer Environment 2 User	845
Developer Environment Multi-User Upgrade	335
Developer Environments Network/Open Look/Motif Options (1/2/all options)	420/675/845

INTERACTIVE UNIX:

UNIX System V Rel 4.0 Starter Kit	$1036
UNIX System V Rel 4.0 Complete System	2236
UNIX System V Rel 4.0 Multi-User Extension	396
UNIX/386 Application Platform (2/3+ User)	625/1395
UNIX/386 Network Platform (2/3+ User)	850/1625
UNIX/386 Workstation Platform (2/3+ User)	999/1795
UNIX/386 Application Developer (2/3+ User)	1350/1995
UNIX/386 Network Developer (2/3+ User)	1425/2045
UNIX/386 Workstation Developer (2/3+ User)	1595/2195

*** NETWORKING ***

Netware V3.11 20 User	$BEST
Netware V2.2 10 User	BEST
Netware V2.2 5 User	BEST
NE-1000 Compatible 8 Bit Ethernet Card	85
NE-2000 Compatible 16-Bit Ethernet Card	95
TCP/IP for DOS	360
TCP/IP Plus (with NFS) for DOS	445
TCP/IP For Netware	490
BTCP/IP Development Environment For Microsoft C	450
LAN Watch	1080

UNTERMINAL & MULTI-USER CARD:

VGNA Plus Base System	$1075
VGNA Plus User Module	565
VGNA 8514 Plus Base System	1435
VGNA 8514 Plus Base System	895
4 Port Multi-User Card (RS232)	299
8 Port Intelligent Multi-User Card (RS232)	299
16 Port Intelligent Multi-User Card (RS232)	549

PERSONAL COMPUTERS:

486/66 MHz EISA II 64K Cache	$CALL
486/33 MHz EISA II 64K Cache	1430
486/50 MHz EISA 64K Cache	1430
486/33 MHz EISA 64K Cache	1210
486/50 MHz 64K Cache	1040
486/33 MHz 64K Cache	755
486/25 MHz 64K Cache	$695
486SX/20 MHz 64K Cache	555
486SX/20 Non-Cache	535
386/40 MHz 64K Cache	440
386/33 MHz 64K Cache	425
386/25 MHz 64K Cache	415
386/25 MHz Non-Cache	380
386SX/25 MHz Non-Cache	340
386SX/20 MHz Non-Cache	$330
386SX/16 MHz Non-Cache	320
286/16 MHz Non-Cache	310

Standard Systems Include:
1 MB RAM, 1.2MB 5.25" or 1.4 MB 3.5" Floppy Drive, 1:1 Interleave HD/FD Controller, 2 Serial & 1 Parallel Ports, 101-Key Enhanced Keyboard, Mini or Baby Case w/200W Power Supply.

ONE YEAR PARTS, TWO YEAR MAINBOARD, THREE YEARS LABOR WARRANTY

Video Card Options:

MGP Card with Parallel Port	$11
256K VGA Card	31
Accumose (with Window Accelerator) 512K VGA Card	60
Paradise 1 MB VGA Card	90
Trident 512K VGA Card	45
Trident 1 MB VGA Card	69
Tseng Labs ET4000 1MB VGA Card (2 Layers)	95
Tseng Labs ET4000 1MB VGA Card (4 Layers)	115
Tseng Labs 1MB VGA Card Hi-Color	130
Diamond Stealth 1MB VRAM VGA Card	265
Diamond ProDesigner IIs 1 MB VGA Hi Color	$BEST
Orchid ProDesigner IIs/EISA1MB VGA Card Hi-Color	$BEST
Video-7 VRAM II 1MB VGA Card	325

Monitor Options:

14" Mono	$90
14" VGA Mono	115
14" AcerView 800x600 VGA Monitor & Card	265
14" Aamazing Super VGA (.39mm)	240
14" Relisys (.28mm)	275
14" Aamazing AutoScan NI VGA (.28mm)	360
14" Sony 1304HG NI (.25mm)	580
15" Hitachi Flat Screen NI VGA (.28mm)	595
16" Mitsubishi NI VGA (.31mm)	950
16" Nanao 9080i VGA (.28mm)	1025
17" Samsung NI VGA (.31mm)	825
17" Toshiba NI VGA (.26mm)	1390

Hard Drive Options:

40 MB	$198
80 MB	295
120 MB/ 130 MB (IDE)	345
Alps 200 MB 16ms (IDE)	580
Conner 170 MB 17ms (IDE)	445
Conner 200 MB 16ms (IDE)	595
Fujitsu 520 MB 9ms (IDE)	1200
Maxtor 200 MB 15ms (IDE/SCSI)	600
Maxtor 340 MB 13ms (IDE/SCSI)	910
Maxtor 650 MB 15ms (SCSI)	1275
Maxtor 1.2 GB 14ms (SCSI)	1815
Western Dig. 200 MB 15ms	595

This Months Specials

Colorado Tape Back-Up 60/120 MB	$198
Microsoft Compatible Mouse	12
Mouse Plus MS Windows 3.0	44
2400 bps modem (MNP 7)	39
9600 Fax/2400 Modem (MNP 7)	77
Bit Fax For Windows 3.0	25
1MBx9 SIMM 70ns	34

Some Of Our Satisfied Customers:

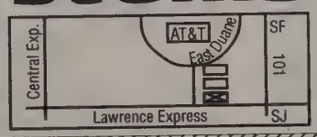
- Cadence Design Systems Inc.
- Integrated Silicon Solution Inc.
- Microsoft Corporation
- Quantum
- Sony Corporation
- UCSF
- Winbond

We Provide The Following Services & Support:

- Network Cabling
- Network System Design
- Network Software/Hardware Installation
- Telephone Support
- On-Site Support
- Custom Software Design
- Graphics User Interface Design (Sunview/X Window/ MS window)

PromoX Systems

1050 East Duane Ave., Suite B
Sunnyvale, Ca 94086



Tel: (408) 733-2966
Fax: (408) 733-2968
E-Mail Address: promox@cup.portal.com
Hours: Mon-Fri 9-6 Sat 10-4
Prices Subject To Change W/O Notice

business. As we've lowered the pricing on the workstations, lowered the pricing on the networking, lowered the price of the servers, they're starting to implement client-server on the commercial side.

What is your sense of how many applications are being written in-house and how many are bought off the shelf?

Again, in Fortune companies, I believe it's 10-1, or 50-1, or 20-1 more internal software development than external. People think that the external ISVs account for the applications software in this industry, but if you walk into a GM or a Ford or a Solomon or a Citibank, there are tons of internal software developers that write applications and write their code. We sell a lot to the internal software developers; they need the kind of environment we're talking about.

We did an interview with Interactive last summer, shortly before Sun acquired them. At the time, they were placing a lot of emphasis on shrink-wrapped UNIX. Shrink-wrapped UNIX is never going to mean the same thing as shrink-wrapped PC...

That's right.

But could you clarify why that is so, and what shrink-wrapped UNIX does mean that's useful?

In the UNIX world, we'd all love to get to a shrink-wrapped concept. You see the beauty of what Windows does—you go down to the store, and you buy Windows, and it runs on 50 million PCs. You buy your applications, and they generally run on any one of those PCs, because there's a very defined strict set of standards that Microsoft employs for application developers.

One of the issues in the '80s and up till recently has been that UNIX has a lot of variants to it, so my UNIX was not necessarily the same as your UNIX. So a lot of application developers writing to UNIX would have to write a little bit different to every different variant.

It wasn't just a recompile, it was more than that?

Well, most of it was recompiling. But you don't recompile on Windows and DOS. You buy Lotus for Windows, and you buy Lotus for DOS. You don't recompile for Compaq versus Dell.

What Interactive was trying to do, and we're doing with Solaris—[*shows box*] this is shrink-wrapped. What we've done is taken our environment and put it on a CD. This runs on all SPARC machines, not just Sun. We started to shrink-wrap for the SPARC market. We have a specification—in the Microsoft marketplace there's this ROM BIOS standard. We have something called SPARC Compliance Definition 1.0. It defines a set of software interfaces—Open Windows, certain toolkits, certain APIs. If you conform to those APIs, which most of those four thousand applications do, then you will run across other SPARC compatibles, other SPARC clones.

That is the first concept. You can now buy this thing, and it says Solaris for SPARC. You can probably take this and load it into your CompuAdd or your Toshiba SPARC machine, and you can take your application—Lotus 1-2-3, Frame, Interleaf—and run it across those machines. So we started to tell the developers, "You can now write to SPARC Solaris, and you can get more volume. You can not only get the volume of Sun computers, but you can get the volume of these other guys."

We're doing the same for Intel. For Intel, because of the different instruction set, it is a recompile. But now a developer like Frame says, "I'm writing to this environment, so instead of getting 250,000 units a year, which is what the SPARC volume is, I can now get whatever the Intel volume is." Maybe it's another 250,000. Or maybe it's more.

So we are getting shrink-wrapped. Will it appear at Fry's Electronics in the next year? Probably not, because the selling of UNIX is another issue. This is a very complex, sophisticated operating system.

It's very support-intensive.

BAR CODE IS OUR SPECIALTY

Input Automation, Inc. is the single source for all your bar code system needs: hardware, software, consulting and system design. Our philosophy is based on two principles: high-quality industrial products, and the best technical support available.

Design and Consulting
To create your optimal solution, an Input Automation consultant will design a complete system, and then recommend equipment that fills your exact needs.

We will not be satisfied until your bar code system is performing to your demanding standards.

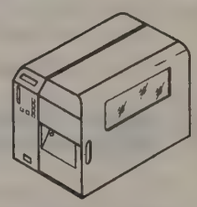
Call us today for a free catalog!

(Dealer inquiries welcome)

Southern California:
Tel: 310•539•3598
Fax: 310•539•0592

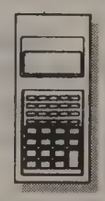
Northern California:
Tel: 408•456•2961
Fax: 408•943•8243

INPUT automation, inc.
Value-Added Distributor
Bar Code Solutions

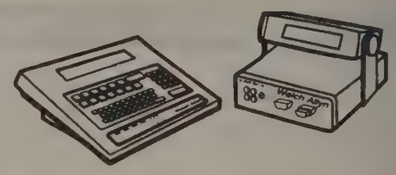


SATO Bar Code Label Printers, Software, and Supplies.

Laser Scanners. Omnidirectional, hand-held/ hands-free, fixed mount.



Panasonic Portables. Recognized the world over for quality.



Welch Allyn bar code readers/scanners. Over 15 years leadership in bar code manufacturing.

© 1991 Copyright Input Automation, Inc. All rights reserved. All product names mentioned are trademarks of their respective manufacturers. Input Automation, Inc. recognizes these trademarks.

HARD DRIVES SUPER SOURCE

HARD DRIVES ☆ CD ROMS ☆ TAPE BACKUPS ☆ REMOVABLES ☆ FLOPPY ☆ CONTROLLERS ☆ CABLES ☆ INSTALLATION

PLEASE NOTE:

IDE Drives work on IBM Compatibles
SCSI Drives work on:
IBM Compatibles, MAC, SUN, NeXT & Amiga Computers

FUJITSU

256K Cache / 200,000 hrs. MTBF
5 Years Factory Warranty

SIZE(MB)	TYPE/FORMAT	Size	SPEED	PRICE
330	IDE or SCSI	3.5"	9ms	$999
520	**IDE or SCSI**	**3.5"**	**9ms**	**$1199**
670	SCSI or ESDI	FH	16ms	$1279
1.2Gb	SCSI	FH	14ms	$1849
2.0Gb	SCSI-2 **NEW**	FH	11ms	$3299

Quantum

SuperFast Hard Drive
2 Year Factory Warranty

SIZE(MB)	TYPE/FORMAT	Size	SPEED	PRICE
52	IDE 64K Cache	3.5"x1"	11ms	$219
52	SCSI 64K Cache	3.5"x1"	11ms	$229
105	SCSI 64K Cache	3.5"x1"	11ms	$339
122	IDE 256K Cache	3.5"x1"	Fast	$369
210	SCSI ProDrive	3.5"	9ms	$619
240	IDE 256K Cache	3.5"x1"	Fast	$619
240	SCSI 256K Cache	3.5"x1"	Fast	$699

CONNER

SIZE(MB)	TYPE/MODEL	Size	SPEED	PRICE
20	IDE CP3024	3.5"x1"	28ms	$119
40	IDE CP4044	3.5"X1"	25ms	$199
120	IDE CP30104	3.5"X1"	19ms	$369
170	IDE CP30174E	3.5"X1"	17ms	$439
211	IDE CP3204F	3.5"	16ms	$599

Seagate

CDC Wren Quality and Performance

SIZE(MB)	TYPE/MODEL	Size	SPEED	PRICE
110	SCSI Swift	3.5"	15ms	$299
170	**SCSI Swift**	**3.5"**	**15ms**	**$429**
325	SCSI Wren4 Clearance		16ms	$699
338	SCSI WrenRunner FH		10ms	$1099
600	SCSI Wren 5 Clearance		16ms	$999
670	SCSI Wren 6 Clearance		15ms	$1099
670	SCSI ST4767N Runner II		11ms	$1619
1.2Gb	**SCSI ST41200N**	**FH**	**15ms**	**$1799**
1.6Gb	ELITE one of the Fastest Drives			$2999
1.6Gb	SCSI ST41650N	FH	15ms	$2339

Maxtor®

150,000 Hrs MTBF & Quality by Maxtor

SIZE(MB)	TYPE/MODEL	Size	SPEED	PRICE
80	IDE 7080AT	3.5"x1"	17ms	$299
80	SCSI 7080SR	3.5"x1"	17ms	$279
130	IDE 7120AT	3.5"x1"	15ms	$369
130	SCSI 7120SR	3.5"x1"	15ms	$349
213	SCSI LXT213SY	3.5"	15ms	$579
340	IDE LXT340A	3.5"	15ms	$889
340	SCSI LXT340SY	3.5"	15ms	$929
535	SCSI LXT535SY	3.5"	12ms	$1365
1.2Gb	**Panther SCSI**	**FH**	**13ms**	**$1799**
1.7Gb	**Panther SCSI**	**FH**	**13ms**	**$2399**

MICROPOLIS

For the PowerUser
5 Yr. Factory Warranty

SIZE(MB)	TYPE/MODEL	Size	SPEED	PRICE
340	SCSI MC1684	HH	14ms	$1149
340	ESDI MC1664	HH	14ms	$1099
670	SCSI MC1624	Half-High	14ms	$1349
680	ESDI MC1568	FH	16ms	$1349
1.2	**SCSI-2 MC1598**	**FH**	**14ms**	**$1899**
1.5	SCSI-2 MC1528	FH	14ms	$2159
1.6	SCSI-2 MC1908	FH 5400RPM		$2859
2.0Gb	SCSI-2 MC1548	FH	Fast	$3199

SyQuest

SCSI interface, Removable Cartridges

SIZE(MB)	MODEL/TYPE	SPEED	PRICE
44M	SQ555 Half Height	20ms	$319
	External Unit with one Cartridge		$459
88M	SQ5110 Half Height	20ms	$499
	External Unit with one Cartridge		$649

Extra Cartridges: 44Mb $75 88Mb $119

CD ROMs

TOSHIBA

FAST: 325ms Avg. Access Time
SCSI Interface with Audio output

Model 3301B	Internal	$429
External for IBM Comp		$529
External for Mac with CD software		$579
PC Kit :Controller Software & Caddy		$149

SONY

CD ROM with Controller & GamePack	$379
CD ROM KIT with 5 CD Software Bundle	$479

External SCSI Drives

for MAC, IBM Comp., NeXT & SUN
Complete with: High Quality Metal Case, SCSI 50-50 or 25-50 Cable & Software for MAC

SIZE(MB)	MAKE	WARR	SPEED	PRICE
52	Quantum LPS52	2Yrs	11ms	$319
80	Maxtor 7080SR	1Yr	17ms	$369
105	Quantum LPS105s	2Yrs.	11ms	$429
125	Maxtor 7120SR	1Yr	15ms	$449
210	Quantum 210S	2Yr	9ms	$699
213	Maxtor LXT213S	1Yr	15ms	$669
240	Quantum LPS240	2Yr	Fast	$779
320	Seagate ST4376N	1Yr	16ms	$849
330	Fujitsu M2622SA	5Yr	9ms	$1099
338	Seagate Runner	1Yr.	10ms	$1349
340	Maxtor LXT340S	1Yr	15ms	$1019
340	Micropolis M1684		14ms	$1249
520	**Fujitsu M2624FA**	**5Yrs.**	**12ms**	**$1299**
535	Maxtor LXT535SY	1Yr	12ms	$1449
600	Seagate Clearance	1Yr.	16ms	$1149
670	Fujitsu M2263SA	5Yrs.	16ms	$1469
670	Seagate ST4766N	1Yr.	15ms	$1299
670	Micropolis MC1624	5Yr	13ms	$1459
670	Seagate Runner II	1Yr.	11ms	$1699
1.2Gb	**Maxtor Panther**	**2Yrs.**	**13ms**	**$1949**
1.2Gb	**Fujitsu M2266SA**	**5Yrs.**	**14ms**	**$1999**
1.2Gb	**Seagate ST41200**	**1Yr.**	**15ms**	**$1999**
1.2Gb	**Micropolis MC1598**	**5Yr**	**14ms**	**$2049**
1.5Gb	Micropolis MC1528	5Yr	14ms	$2349
1.6Gb	Micropolis MC1908	SuperFast		$3049
1.6Gb	Seagate ST41650	1Yr.	14ms	$2499
1.6Gb	Seagate ELITE Super Fast			$3099
1.7Gb	**Maxtor Panther**	**2Yrs.**	**13ms**	**$2499**
2.0Gb	Fujitsu M2652SA	5Yrs.	11ms	$3499
2.0Gb	Micropolis MC1548	5Yr	Fast	$3399

TAPE BACK UPs

ARCHIVE

The BEST Name in BACK-UP Drives

SIZE(MB)	MODEL/TYPE	SPEED	PRICE
250	**VIPER** SCSI DC6000	5Mb/min	$499
	External Unit		$599
2.0Gb	**PYTHON** DAT SCSI	10M/min	$1199
	External Unit		$1289
	SYTOS PLUS Software for IBM Comp		$99
	Back-up Software **for MAC**		$79

COLORADO

runs off the floppy port
250Mb JUMBO for IBM Comp Internal.. $275
Cable included

CONTROLLER CARDS

SCSI Controllers

Adaptec

1522 16bit 7HD/2FD KIT	$169
1542BK 16bit Bus Master 7HD/2FD	$269
1640 MicroChannal for PS/2 7HD	$349
1740 EISA KIT, 32bit 7HD	$499

PROMISE TECHNOLOGY
<0.3ms Fast, uses regular 256x9, 1x9, 4x9 simms
CACHING 16BIT with 0Mb (up to 16M) $299

ALWAYS
2000 KIT 16BIT 7HD/2FD easiest to use $199

Future Domain

TMC850 8Bit 7HD	$65
TMC1680 16bit 7HD/4FD full Kit	$269

DTC
3290AS EISA 32bit Caching with 512K.. $499

IDE Controllers

Standard IDE controllers

2FD/2HD controller with Cables	$20
2FD/2HD with 2Serial/1Par./1Game	$29

PROMISE TECHNOLOGY
<0.3ms Fast, uses regular 256x9, 1x9, 4x9 SIMMS

Caching 0Mb (up to 16Mb) 2HD/3FD	$239
Caching with I/O 4HD/3FD	$259

Misc ITEMS

MEMORY SIMMS

FREE INSTALLATION FOR MAC®

1Mb 1x8 80ns for Mac (free Installation)	$34
1Mb 1x9 80ns/70ns SIMMS	$36
4Mb 4x9-4x8 80ns/70ns SIMMS	$125

WESTERN DIGITAL

2 YR. FACTORY WARRANTY

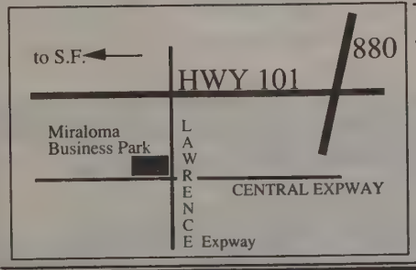
80MB IDE 3.5" 1"	19ms	$289
120Mb IDE 3.5" 1"	17ms	$349

FLOPPY DRIVES

1.2M $57 1.44M Kit $57

NCA WELCOMES:
Corporate* ,University, & Govm't
Purchase Orders

LTD. QTY ON SPECIAL ITEMS. PRICE IS SUBJECT TO CHANGE WITHOUT NOTICE. ALL LOGOS ARE PROPERTY OF THEIR RESPECTIVE COMPANIES.



THE HARD DRIVE SPECIALISTS

Business Hours:M-F: 9-7 SAT: 10-4

NCA PERIPHERALS

COD | MasterCard | VISA

(408) 739-9010
FAX (408) 739-2420

1190 Miraloma Way Suite'S' Sunnyvale CA (NW corner of Lawrence & Central Expwy)

Why Choose NCA:
- Hard Drives Specialist.
- Tech Support for IBM & MAC
- Great Selection & Inventory.
- Only The Best Names in HardDrives.
- Most Competitive Prices.
- Corporate, University & Govm't PO's Welcome.
- Phone orders welcome.
- We Ship worldwide.
- Ask a friend.

Right. And by the way, I think the same thing is going to happen with NT or Taligent or others. These are not made to be "pick it off the shelf, throw UNIX in, and you can administer networking and other good stuff."

On the other hand, we are making it a lot simpler. I come in in the morning, and I'm not UNIX-literate. I press one key, I type my password, up pops a very user-friendly environment. I check my mail, I do my calendar. I can pop a spreadsheet. I never see UNIX. In the course of my day I never see UNIX.

You don't sit down and do your memos in vi just for fun?

No. I *can*—I can pop a shell onto the screen...

So what we've done is, we've started to paint a veneer on top of UNIX. We also have worked a lot on administration, and system and network administration, to make that user-friendly. Installation and software development are also ways that we're trying to make it easier.

So it's not really shrink-wrapped UNIX, it's shrink-wrapped Solaris. I don't think you're going to get one UNIX. That's okay. What you're going to get is—we have four thousand applications that run on Solaris SPARC. When we get Solaris Intel, those four thousand applications will be recompiled to run on Solaris Intel. And then hopefully we'll get more applications, plus we'll pick up the Interactive applications and some of the SCO applications, because they're Intel binary-based.

The real goal is—if you're a large end-user, you basically can take this CD, and you'll have a SPARC version and an Intel version. And you'll just plug it in, and then you can take your application portfolio and run it across that same environment. So the user training and the user relearning—it's like the same dashboard, it's the same environment, whether it's Intel or SPARC. From the ISV's point of view, the real win is he gets to write now for double the volume, so he basically shares his costs.

That's where I think "shrink-wrapped UNIX" will be in the next two years. Maybe if we can figure out the channels, someday when you walk into a very sophisticated dealer or VAR you will see something on the shelf like this, and you will see applications that are shrink-wrapped. There is shrink-wrapped UNIX [*getting box off shelf*]—this is dBASE, this is Lotus 1-2-3 for SPARC Solaris.

What it really means is I can take this thing—see this SPARCware logo?—this thing says it's SCD compatible. You should be able to take this thing and run it in any SPARC machine that has that label on it—SCD 1.0. It's closer to the model we've all grown up with in the PC space, where I can take dBASE and run it on Dell, Compaq, IBM, with Windows. Now I can take this package, with this CD, and run it on any SPARC machine.

The goal is also for the vendors to release something that says "Solarisware for Intel." Take this CD for Intel, with this product recompiled for the Intel instruction set, and run it on any Intel machine, or any Intel machies we specify that are Solaris-compatible. That's the goal we're working towards.

When are you going to ship?

The product we announced in October was Solaris 2.0. This [box] is 1.0. Version 2.0 for SPARC features a full UNIX System V.4 implementation; it's a very robust system with symmetric multiprocessing. It's the completion of the V.4 Berkeley merge—it features multiprocessing, a lot of commercial extensions, disk mirroring, a lot of security administration capability. That will be available in SPARC in the June-July timeframe this year. We hope to be demonstrating the Intel product by then, and we should be shipping that in the second half of the year, probably in the fall.

We're getting quite excited. We're getting a lot of interest. We're offering a robust alternative for users in large companies that want to take advantage of a network-based environment. It's not a Windows alternative; it's an alternative for people that have been doing timesharing computing for some time now, that are offloading the mainframes, that are downsizing in large companies, or upsizing their PCs. A lot of people are frustrated by the performance of PCs—486s will help, and then they need the OS to run the 486s. ■

SPECIAL SALE!
386/40/64K
$275

WE SAVE YOU MONEY

GRAND OPENING IN SAN BRUNO

- The Highest Quality Self Service Center
- No Middle Man Costs—No Hidden Costs —the Best Job for Less!
- Build Your Own Computer—Upgrade and Repair Your Computer at Our Center
- 1 Year Warranty on Parts

BEST BUY!!!
BUILD YOUR OWN COMPUTER
386/40 SVGA System
Includes:
2 Floppy Drive (TEAC)
100MB Hard Disk
4MEG Memory
Mouse & Mouse Pad.
ONLY
$1275

MOTHERBOARD
486/33/256K Cache $699
386/40/64K Cache 275
386/33/64K Cache 270
386SX/25 159
386SX/16 140
286/20 89

MONITOR
SVGA (1024x768) .28 ..... $293
SVGA Viewsonic 4E 325
SVGA Viewsonic 5+ 565
Sony 1304 585
VGA Viewsonic 245

VIDEOCARD
Oak 512K $45
Trident 1MB 85
Tseng 4000 1MB 110
Pro Designer II's 170
Fahrenheit 275

DRIVE
1.2/1.44 Floppy Teac $59
40MB/80MB IDE 205/320
105MB/120MB IDE 345/375
170MB/200MB IDE 495/600
120MB/250MB Tape Backup 215/309

CONTROLLER
IDE w/IO (2S, 1P, 1G) $24
MFM/RLL AT 50/78
DTC SCSI 140

KEYBOARD
Lite-On $29
Keytronic 42
Maxiswitch 40
Omnikey 102/Ultra 75/115

MISCELLANEOUS
Mini Tower Case $63
Medium Tower 105
Baby AT Case 80
Full Tower 140
Mouse (Artec) 17
MS DOS 5.0 45
Windows 3.0 65
1MB Simm 70ns 40
4MB Simm 70ns 155
256K Simm 80ns 12

MULTIMEDIA
SONY INT CD ROM
w/CD SOFTWARE $470
SPECIAL SALE!

COMTEK Computer
COMTEK COMPUTER
SELF SERVICE CENTER

DUBLIN
6602 DUBLIN BLVD.
DUBLIN, CA 94568
(510) 803-1530

SAN BRUNO
1778 EL CAMINO REAL
SAN BRUNO, CA 94066
(415) 225-0153

HOURS M-F 10AM - 7PM • SAT & SUN 10AM-5PM

- 100% Financing with 90 Day Free Interest
- Accept Visa and Mastercard
- Price Subject to Change without Notice
- Dealer Inquiries Welcome
- Not Responsible for Typographical Errors

BLACKSHIP

Celebrating our 12 Year Anniversary

For All Your PC Needs

PORTABLE PUNCH

•NOTEBOOK 386SX/20 ..... $1495
- •INTEL 386™ SX 20 MHz CPU
- •FCC CLASS B, UL, TUV & CSA APPROVED
- •6.5 lbs.
- •8.5" x 11.7" x 2.0"
- •2 MB RAM
- •3.5" 1.44 MB Floppy
- •40 (STANDARD) 60/80/120MB HARD DRIVE
- •640X480 VGA w/32 SHADES OF GRAY
- •(1) SERIAL, (1) PARALLEL PORTS
- •MS-DOS 5.0 w/GW BASI INSTALLED
- •DURABLE CARRYING CASE

w/60 MB $1595
w/80 MB $1695
w/120 MB $1795

•LAPTOP 386SX/20 ..... $1895
- •INTEL 386™ SX 20 MHz CPU
- •FCC CLASS B, UL, TUV, & CSA APPROVED
- •14.7 lbs.
- •12.7" x 16.7" x 3.1"
- •1 MB RAM
- •40 (STANDARD) 80/120/240MB HARD DRIVES
- •640X480 VGA w/16 SHADES OF GRAY
- •(2) SERIAL, (1) PARALLEL PORTS
- •MS-DOS 5.0 w/GW BASIC INSTALLED
- •DURABLE CARRYING CASE

w/80 MB $1995
w/120 MB $2095
w/240 MB $2395

STANDARD FEATURES
- •1 YEAR PARTS & LABOR WARRANTY
- •30 DAY MONEY-BACK GUARANTEE
- •1 YEAR GE-ON SITE SERVICE (EXCL. NOTEBOOK, LAPTOP)
- •LIFETIME TOLL-FREE TECHNICAL SUPPORT HOTLINE 1-800-231-TECH
- •VOLUME PURCHASE DISCOUNTS
- •COMPLETE CUSTOM CONFIGURATIONS

SX SAVY

- •INTEL 486/386™ SX 20 MHz CPU
- •2 MB RAM
- •(2) SERIAL, (1) PARALLEL PORTS
- •DUAL HARD/FLOPPY DISK CONTROLLER
- •1.2MB 5.25" FLOPPY DRIVE
- •1.44MB 3.5" FLOPPY DRIVE
- •40MB IDE HARD DISK
- •16 BIT COLOR VGA CARD
- •14" VGA COLOR MONITOR
- •101-KEY ENHANCED KEYBOARD
- •MS-DOS 5.0

486SX/20 ..... $1595
386SX/20 ..... $1295

EISA FILE SERVER SPECIAL

- •486/50 EISA W/256K CACHE
- •8 MB MEMORY
- •(2) SERIAL,(1) PARALLEL PORTS
- •1.2 MB 5.25" FLOPPY DRIVE
- •1.44 MB 3.5" FLOPPY DRIVE
- •340 MB SCSI HARD DRIVE
- •250 MB TAPE BACK-UP
- •SCSI CONTROLLER W/1 MB
- •MONO MONITOR & VIDEO CARD
- •TOWER CASE W/250W POWER SUPPLY
- •MS DOS 5.0

$4895

GSA #GS00K91AGS5225

DESKTOPS DELIVER

486:
- •INTEL 486™ 33/50 MHz CPU
- •4MB RAM MEMORY
- •64K CACHE MEMORY
- •(2) SERIAL, (1) PARALLEL PORTS
- •DUAL FLOPPY/HARD DISK CONTROLLER
- •1.2MB 5.25" FLOPPY DRIVE
- •1.44 MB 3.5" FLOPPY DRIVE
- •200 MB IDE 15ms HARD DRIVE
- •16 BIT SVGA CARD w/1 MB
- •14" 1024x768 SVGA MONITOR
- •101-KEY ENHANCED KEYBOARD
- •MS-DOS 5.0

386:
- •INTEL 386™ 25/33 MHz CPU
- • SAME CONFIGURATION AS ABOVE
- •120MB IDE HARD DRIVE

486/50 EISA/ISA $3395/2695
486/33 EISA/ISA $2995/2395
386/33 ..... $1795
386/25 NON-CACHE $1695

BLACKSHIP

2031 O'TOOLE AVENUE SAN JOSE, CA 95131
Tel. (408) 432-7500 Fax (408) 432-1443

VISA MasterCard DISCOVER AMERICAN EXPRESS

PRICES, SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE. ALL TRADEMARKS AND REGISTERED TRADEMARKS SHOWN BELONG TO THEIR RESPECTIVE OWNERS, THE INTEL LOGO IS A TRADEMARK OF INTEL CORPORATION

ONE YEAR WARRANTY

VISA

AMT INTERNATIONAL

3074 LANDESS AVENUE, SAN JOSE, CA 95132
(408) 942-9695 FAX (408) 942-5509

LOWEST PRICES SAME DAY SHIPPING

MONTHLY SPECIALS:

ALL BASIC SYSTEMS INCLUDE

- 2 MB MAIN MEMORY
- 1.2 MB OR 1.44 TEAC FLOPPY DRIVE
- 2 FD/2 HD IDE CONTROLLER CARD
- 2 SERIAL, 2 PARALLEL & 1 GAME PORT
- 101 KEY KEYBOARD (ENHANCED)
- AMI BIOS
- BABY AT OR MINI CASE W/200 W PS

14" MONO MONITOR WITH DISPLAY CARD $115
14" VGA COLOR MONITOR WITH VGA CARD W/256 275
14" SVGA COLOR MONITOR WITH SVGA 1 MB CARD ...359

286-16 MHz $259

386SX-16/25 MHz $349/379

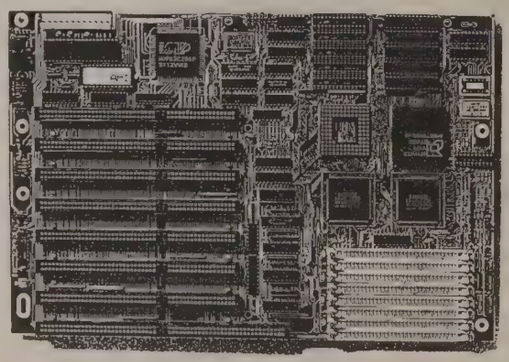
386DX-33 MHz *With 64K CACHE* $489

386DX-40 MHz *With 64K CACHE* $499

486DX-33 MHz *With 64K CACHE* $849

• 386DX-40 MHz *with 64K CACHE* $279

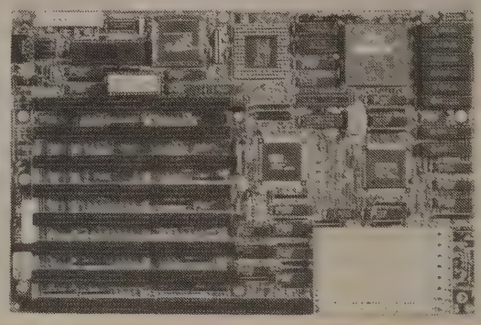
- UP TO 256K CACHE & 32 MB MAIN MEMORY
- INTEL 80387 OR WEITEK (OPTIONAL)
- COMPATIBLE WITH
- MS-DOS,
- WINDOWS 3,
- OS/2,
- UNIX,
- XENIX,
- NOVELL,
- CAD/CAM,
- DTP



• 486DX-33 MHz $595

WITH 64K CACHE MEMORY

- UP TO 256K CACHE & 64 MB MAIN MEMORY
- OPTI CHIPSET
- SEVEN 16-BIT & ONE 8 BIT SLOTS
- OPTIONAL 80487 OR WEITEK 4167
- COMPATIBLE WITH
- MS-DOS,
- WINDOWS-3
- OS/2,
- UNIX,
- XENIX,
- NOVELL,
- CAD/CAM,
- DTP



MOTHERBOARDS WITH CPU

- 486-33 EISA WITH 64K CACHE .$1245
- 486-33 WITH 64K CACHE (USA) 650
- 486-33 WITH 64K CACHE 595
- 386-33 WITH 64K CACHE 265
- 386-25 215
- 386SX-25 159
- 386SX-16 139
- 286-16 89
- 286-12 79

HARD DISK DRIVES

- W. DIGITAL 40 MB IDE $179
- CONNER 40 MB IDE 195
- W. DIGITAL 80 MB IDE 275
- CONNER 80 MB IDE 285
- SEAGATE 105 MB IDE 315
- QUANTUM 120 MB IDE 349
- MAXTOR 130 MB IDE 359
- SEAGATE 130 MB IDE 365
- CONNER 200 MB IDE 595
- MAXTOR 213 MB IDE 610
- QUANTUM 240 MB IDE 625
- CDC 21.5 MB SCSI 225

MONITORS

- 12" SAMSUNG MONO $79
- 14" SAMSUNG MONO 105
- 14" SAMSUNG CVGA (640x480) 215
- 14" SAMSUNG CVGA (640x480) 245
- 14" SAMSUNG SVGA (1024x768).....289
- 14" PURETEK SVGA (1024x768) NI ...355
- 14" AAMAZING SVGA (1024x768) NI .365
- 14" SONY 1304 (1024x768) NI 510
- 15" SAMSUNG SVGA (1024x768)....CALL
- 17" SAMSUNG SVGA (1024x768).....825
- 19" NANAO SVGA (1024x768) NI 995

*ALL ITEMS TILL SUPPLIES LAST

ONE YEAR WARRANTY

VISA

AMT INTERNATIONAL

MasterCard

LOWEST PRICES SAME DAY SHIPPING

3074 LANDESS AVE., SAN JOSE, CA 95132

(408) 942-9695 FAX (408) 942-5509

QUANTITY PRICING FOR DEALERS & VARS, PLEASE CALL!

MEMORY BOARDS FROM ACCULOGIC

- **RAMpAT! 16 BIT** Up to 16 MB 80286, 80386SX, 80386 — $95
- **SIMMply-RAM 16 BIT** Up to 8 MB For PS/2-50, 50Z, 60, 70, 80 — $199
- **SIMMply-RAM 8/16 BIT** Up to 8 MB For IBM PC, PC/XT, PC/AT, PS/2 — $199
- **SIMMply-RAM 32 BIT** Up to 32 MB For PS/2-70, 80, 90 — $225

FAX/MODEMS

2400B INTERNAL w/MNP 2-7	$49
2400X EXTERNAL w/MNP 2-7	89
942UF FAX/MODEM 9600/2400	99
2400XMAC EXTERNAL FOR MACINTOSH	119
9624FXMAC EXTERNAL FOR MACINTOSH	179
9642X EXTERNAL 9600BPS w/42BIS & MNP 5	425

VIDEO CARDS

MONO MGP	$425
TRIDENT 9000 w/256K	25
TRIDENT 9000C w/1 MB	89
TSENG ET4000 VESA w/1 MB	109
ORCHID PRO-IIS w/1 MB	109
ORCHID FAHRENHEIT 1280 VRAM w/1 MB	CALL

KEYBOARDS

KEYTRONICS 101	$45
OKI CLICK SOUND	30
101 KEY SOFT SOUND	25

MEMORY UPGRADES

SIMM MODULES

IBM TYPE

Add $2.00 for SIPPS

4Mx9-80	$130
4Mx9-70	135
4Mx9-60	140
1Mx9-10	30
1Mx9-80	32
1Mx9-70	35
256x9-70	12
256x9-10	10
256x9-80	11
256x9-60	12

APPLE-MAC

1Mx8-70	$35
1Mx8-10	32
1Mx8-80	34
4x8-80	120

DRAM

DRAM 256X4		256X4-80NS	5.75
256X4-120NS	$4.00	256X4-70NS	6.00
256X4-100NS	4.25	256X4-60NS	6.50
DRAM IMGXI		1 MGXI-80NX	5.25
1 MGXI-120NS	$3.00	1 MGXI-70NX	5.75
1 MGXI-100NX	4.00	1 MGXI-60NX	6.00
256XI-STATIC COL			
51258P-10	$1.99	1X4-80 ZIPP	20
AAA 2800-08	2.25	1X4-80STT ZIPP	20
AAA 2800-07	3.75	1X4-70STT ZIPP	22
AAA 2800-60	4.00		
DRAM 64X4		**DRAM 64X1**	
4164-120	$1.50	4164-15	$1.00
4164-100	1.75	4164-12	1.50
		4164-10	1.75
DRAM 256X1			
256XI-150NS	$1.79	256XI-80NS	1.99
256XI-120NS	1.99	256XI-70NS	1.00
256XI-100NS	1.00	256XI-60NS	1.50

1x4 4x1 STATIC

514402-80 (1X4) STT, ZIPP	$18
514400-80 (1X4) ZIPP	18
514400-80 (1X4) DIPP	20
514400-80 (1X4) SOJ	15
514100-80 (4X1) SOJ	15.50

CPU CHIPS

80386DX-16	$99
80386DX-20	120
80386DX-25	125
80386DX-33	130
80386SX-16	45
80386SX-25 AMD	63
80386SX-20 INTEL	68
80486DX-25	308
80486DX-33	399
80286-20	20
80286-10 (PLCC)	6
80286-12 (PLCC)	5.75
80286-16 (PLCC)	18
80486DX-50	675
80486SX-20	199
V-20-8	6
V-20-10	10
V-30-10	10

MATH CO-PROCESSOR

INTEL

8087-5 MHz	$70
8087-2 8 MHz	95
8087-1 10 MHz	135
80287-6 6 MHz	79
80287-8 8 MHz	79
80287XL 8/10 MHz	89
8028XTL 12 MHz (Laptop)	99
80287-10 10 MHz	89
80C287-12 12 MHz	109
80387SX-16	129
80387SX-20	135
80387DX-20	140
80387DX-25	185
80387DX-33	195

WEITEK

3167-20 20 MHz	$300
3167-25 25 MHz	350
3167-33 33 MHz	475
4167-25 MHz	550
4167-33 MHz	700

CYRIX

83087-16 16 MHz	$155
83087-20 20 MHz	155
83087-25 25 MHz	155
83087-33 33 MHz	185
83SX87-16 16 MHz	120
83SX87-20 20 MHz	125

IIT

8C287-10	$69
8C287-12	79
8C287-20	89
8C387-20	155
8C387-20SX	155
8C387-33	135

ULSI

US 83C87DX-25	$130
US 83C87DX-33	139
US 83C87DX-40	169
US 83C87SX-16	99
US 83C87SX-20	105

CHIPS & TECHNOLOGY

387DX-25	$125
387DX-33	149

AMD

80386 DX 40	CALL

LASER PRINTERS MEMORY

HP II & IID; CANON LBP-811 & LBP-811R; OLIVETTI PG 108 & PG 208

1 MB Board	$99
2 MB Board	145
4 MB Board	239

HP IIP; III; IIID

1 MB Board	99
2 MB Board	150
4 MB Board	215

IBM 4019 & 4019e

1039136 1 MB Board	105
1039137 2 MB Board	140
1038675 3.5 MB Board	305

TI MicroLaser & MicroLaser PS

1 MB Module	85

Panasonic KX-P4420; KX-P4450I

1 MB Board	135
2 MB Board	160
4 MB Board	260

Epson EPL-6000; Toshiba PageLaser 6; Packard Bell PP9500; Facit P6060; Mannesmann Tally 905; AT&T 593 Laser; NCR 6435 Laser

1 MB Board	155
2 MB Board	160
4 MB Board	260

IBM PS/2 MEMORY

Mdl 30/386; Exp Brd 1497259

30F5348 512K Kit	$54
30F5360 2 MB Kit	149

Mdls 70-061; -121; 55SX; 65SX; Exp Brd 6450605; 6450609; 34F3077; 34F3011

6450603 1 MB Module	89

Mdls 70-061; -E61; -121; 50Z, 55LS, 65LS; 55SX; 65SX; P70; Exp Brd 6450605; 6450609; 34F30xx

6450604 2 MB Module	139

Mdls 70-A21; -A61; -B21; -B61

6450608 2 MB Module	149

Mdls 55SX, 65SX; 55LS; 65LS

34F2933 4 MB Module	275

Mdl 80-041

6450375 1 MB Card	145

Mdls 80-111; -121; -311; -321

6450379 2 MB Card	220

Mdls 80-A21; -A31

6451060 4 MB Card	469

Mdls 90; -95

6450902 2 MB Module	255
6450128 4 MB Module	550

Mdls 50 & 60

6450609 2-14 MB Exp Brd	475

Mdls 70 & 80

6450605 2-8 MB Exp Brd	479
34F3077 2-14 MB Exp Brd	450
34F3011 4-16 MB Exp Brd	900

Adapter 6450367

6450372 2 MB Module	285

PS/1 Home System

1057035 512K Upgrade	110
2 MB Upgrade	215
4 MB Upgrade	310

APPLE MACINTOSH MEMORY

Mac SE, SE/30; II; IIcx; IIx; IIci; IIsi

1 MB Memory Kit	$80
4 MB Memory Kit	185

Mac IIsi

M051-3LL-A 8 MB Kit	375

Mac IIci; IIsi

16 MB Memory Kit (IIci requires MAXIMA)	750

Mac IIfx

M0376LL-A 4 MB Kit	295
16 MB Kit (requires MAXIMA)	1399

Mac Classic

M3631LL-A 1 MB Exp Brd	105
3 MB Exp Brd	325

Mac Portable

1 MB Card (True Static)	235
2 MB Card (True Static)	590
3 MB Card (True Static)	615
4 MB Card (True Static)	810

Powerbook 100; 140; 170

2 MB Module	250
4 MB Module	439
6 MB Module	565

EVEREX UPGRADE

2 MB BRD 386 STEP 33	$195
4 MB BRD 486 STEP 25	435
1 MB KIT 386 STEP 16, 20, 25	81
2 MB KIT 386 STEP 16, 20, 25	166
4 MB KIT 386 STEP 16, 20, 25	254
8 MB KIT 386 STEP 16, 20, 25	556
Tempo LX Portable 386SX20 2 MB Module	235

NEC MEMORY

POWERMATE SX PLUS

1-2 MB W/1 APC-H850E	$175
4-8 MB W/4 APC-H52E	550

POWERMATE 386/25

2 MB APC-H655X	549
8 MB APC-H656X	1549

POWERMATE

2 MB KIT OP-410-5201	175
4 MB KIT OP-410-5202	450

PROSPEED

286, 386SX16 1 MB	269
4 MB	749
386SX 20 1 MB	275
386 2 MB	489

SUN MICROSYSTEMS

Mdls 3/60; 3/80; 386i/150x; 4/60; 4/65; 4/330; 4/370; 4/390; SPARC 1

4 MB Memory Kit	$299

Mdls 4/110; 386i/250

X116D 16 MB Kit	875

Mdls 4/60; 4/65; 4/330; 4/370; 4/390

X116H 16 MB Kit	875

Mdls 4/330; 4/370

X108E 8 MB Kit	610

Mdl SPARC SLC

X105Z 4 MB Module	275

SUN 3/100's series

4-24 MB Exp Brd	950

SUN 3/200's; 4/200's; 3/400's series

8-32 MB Exp Brd	1750

Mdl 3/50

4-8 MB Exp Brd	769

Mdls 4/330

8-64 MB Exp Brd	2699

AST RESEARCH MEMORY

Premium II 386/SX20; 386/33T; 486

500780-003 1 MB Module	$80
500780-004 4 MB Module	250

Premium 386/33; -25; SX/16; 486/33; 25T; 25; 25E

Cupid Exp Brd 500722-004	
500718-002 1 MB Module	79

Premium 386/25; SX/16

500718-001 1 MB Module	80

Premium 386C; 386/16; Advance FASTRAM; FASTboard 386

500510-007 1 MB Kit	95
500510-008 4 MB Kit	250

Premium 386

500510-003 1 MB Kit (static)	120
500510-004 4 MB Kit (static)	275

Cupid Exp Brd for Premium 386/25; 386/33; 486's

500722-004 1-16 MB Exp Brd	425

Premium Exec Notebook 386SX20

1 MB Module	115
4 MB Module	220

ZENITH DATA SYSTEMS MEMORY

Mdl Z-386SX

Z-605-1 2 MB Kit	$189

Mdls Z-386/33E; 33; 25; 20

ZA-3800-ME 1 MB Module	95
ZA-3800-MK 4 MB Module	350

Mdls Z-386/33; 25; 20

ZA-3600-MG 2 MB Module	175

SuperSport SX

ZA-180-64 2 MB Card	295
ZA-180-86 2 MB Card (ALPHA)	295
ZA-180-87 2 MB Card (BETA)	295

SuperSport 286; 286E

ZA-180-66 1 MB Card	145

SuperSport 286E

ZA-180-64 2 MB Card	295

Turbosport 386E

ZA-3034-ME 1 MB Card	205
4 MB Memory Card	595

MICRO-PROCESSOR

68020	16MHz	$129.00
	20MHz	169.00
	25MHz	179.00
	33MHz	199.00
68030	16MHz	129.00
	25MHz	199.00
68010	16MHz	60.00

QUME LASER MEMORY

QS 410

1 MB	$210
2 MB	150
3 MB	199
4 MB	220

COMPAQ MEMORY

DeskPro 386/20e; 20; 35e, 25; 286e

113131-001 1MB Module	$109
113132-001 4MB Module	275

DeskPro 386/20e; 25e

113644-001 1-9MB Exp Brd	200
113645-001 4-12MB Exp Brd	450

DeskPro 386s-16

113646-001 1MB Module	119
112534-001 4MB Module	245
113633-001 1-9MB Exp Brd	199
113634-001 4-12MB Exp Brd	450

DeskPro 286N; 386N; 386SX/20

118688-001 2MB Module	89
118690-001 4MB Module	440

DeskPro 386N; 386SX/20

118689-001 2MB Module	149

DeskPro 286N; 386N

118700-001 0-4MB Exp Brd	115

DeskPro 386/33

115144-001 2MB Module	215

DeskPro 386/33L; 486/25; 486/33L; SystemPro

115144-001 2MB Module	175
116561-001 8MB Module	745
116568-001 32MB Module	5000

DeskPro 386/16

118071-001 1MB Kit	169
118069-001 1MB Exp Brd	398
118069-002 2MB Exp Brd	540
118072-001 4MB Kit	399
118070-001 4MB Exp Brd	710
118070-002 8MB Exp Brd	1050

Portable 386

107651-001 1MB Kit	249
107653-001 4MB Exp Brd	609
107654-001 4MB Exp Brd	775

Portable LTE (8086)

117077-001 512K Module	139

Portable LTE/286

117081-001 1MB Module	99
117081-002 2MB Module	150
117081-003 4MB Module	490

Portable SLT/286

110235-001 1MB Module	190
110237-001 4MB Module	628

Portable SLT/386

118303-001 1MB Module	180
118304-001 2MB Module	370
118305-001 4MB Module	525

Portable III

107331-001 512K Kit	98
107332-001 2MB Kit	218

TOSHIBA PORTABLE MEMORY

T1200XE 2 MB CARD	$180
T1600 2 MB CARD	182
T3100SX 2 MB CARD	185
4 MB CARD	385
T3100e 512K CARD	135
2 MB CARD	165
T3200SX 2 MB CARD	165
4 MB CARD	275
T3200 3 MB CARD	275
T1000SE; XE 1 MB CARD	165
2 MB CARD	250
T5100 2 MB CARD	165
T5200; T8500 2 MB CARD	165

HP PERSONAL SYSTEM MEMORY

VECTRA 486 PC (must install in pairs)

D2150A 1 MB Module	105
D2152A 8 MB Module	525

VECTRA 386/25 PC

D2381A 2 MB Module	175
D2152A 8 MB Module	525

VECTRA QS/20PC, RS/25PC; RS/20PC, QS/16S

D1640A 1 MB Kit	150
D1642A 4 MB Kit	295

Apollo DN2500 1 MB Module 89

Apollo DN3010A; 3500; 3550; 4000; 4500

2-8 MB Exp Brd 609

CANON MEMORY

FOR CANON LBP-4

1 MB	$225
2 MB	399

FOR CANON LBP-8111

1 MB	146
2 MB	399
3 MB	549
1 MB UPGRADE BRD LBP-8111	146
1 MB UPGRADE BRD LBP-8111	358

Terms and Conditions

1. AMT will meet or beat any advertised price.
2. Full five year warranty with all AMT upgrades.
3. Gov't, University, and qualified firms Purchase Order Accepted.
4. U.S. and International shipping via UPS, DHL and Federal Express.
5. All sales must include sales tax.
6. All sales must be C.O.D. cashier/certified checks.
7. There is a 15% restocking charge for all refused merchandise.
8. Prices subject to change without notice.

HOURS: Mon.-Fri. 8am-6pm Saturday 9am-3pm

MICRO MARKETPLACE

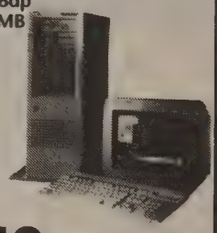
the BOSS Advantage

5 Year Labor, 1 Year Parts Warranty

FCC Class "B" Rating on all Systems

486-50 w/256K Cache
Super VGA Monitor
200 MB Hard Drive

- Intel 486-50 w/256K
- 4MB RAM exp. to 32MB
- 200 MB Conner Hard Drive
- 14" Viewsonic 6 Monitor Non-Interlaced (1024x768) .28dp
- Tseng ET 4000 VGA Card w/1MB
- Teac 3.5 & 5.25 Floppy Drive
- IDE Hard/Floppy Controller
- AT I/O Card
- Clock/Calendar
- 101 Enhanced Keyboard
- Mid-tower
- Windows 3.0
- DOS 5.0
- Impression Mouse



$2750
SCSI Conversion Available

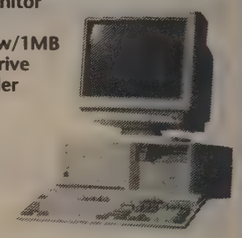
486-33 w/64K Cache
Super VGA Monitor
200 MB Hard Drive

- Intel 486-33 w/64K
- 4MB RAM exp. to 32MB
- 200 MB Conner Hard Drive
- 14" Viewsonic 6 Monitor Non-Interlaced (1024x768) .28dp
- Tseng ET 4000 VGA Card w/1MB
- Teac 3.5 & 5.25 Floppy Drive
- IDE Hard/Floppy Controller
- AT I/O Card
- Clock/Calendar
- 101 Enhanced Keyboard
- Mid-tower
- Windows 3.0
- DOS 5.0
- Impression Mouse

$2150
SCSI Conversion Available

386-40 w/64K Cache
Super VGA Monitor
120 MB Hard Drive

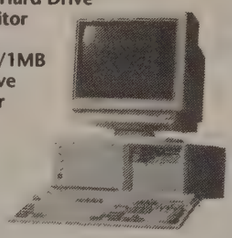
- AMD 386-40 w/64K Cache
- 4MB exp. to 32MB
- 200 MB Conner/Quantum Hard Drive
- 14" Mitac Super VGA Monitor (1024x768) .28dp
- Trident Super VGA Card w/1MB
- Teac 3.5 & 5.25 Floppy Drive
- IDE Hard/Floppy Controller
- AT I/O Card
- Clock/Calendar
- 101 Enhanced Keyboard
- Desktop Case
- Windows 3.0
- DOS 5.0
- Impression Mouse



$1550
SCSI Conversion Available

386-33 w/64K Cache
Super VGA Monitor
120 MB Hard Drive

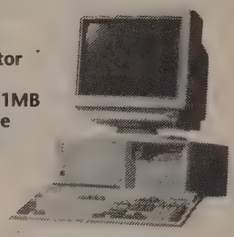
- Intel/AMD 386-33 w/64K Cache
- 4MB exp. to 32MB
- 120 MB Conner/Quantum Hard Drive
- 14" Mitac Super VGA Monitor (1024x768) .28dp
- Trident Super VGA Card w/1MB
- Teac 3.5 & 5.25 Floppy Drive
- IDE Hard/Floppy Controller
- AT I/O Card
- Clock/Calendar
- 101 Enhanced Keyboard
- Desktop Case
- Windows 3.0
- DOS 5.0
- Impression Mouse



$1500
SCSI Conversion Available

386SX-25
Super VGA Monitor
120 MB Hard Drive

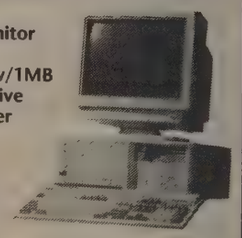
- AMD 386SX-25
- 4MB exp. to 8MB
- 120 MB Quantum/ Maxtor Hard Drive
- 14" Mitac Super VGA Monitor (1024x768) .28dp
- Trident Super VGA Card w/1MB
- Teac 3.5 & 5.25 Floppy Drive
- IDE Hard/Floppy Controller
- AT I/O Card
- Clock/Calendar
- 101 Enhanced Keyboard
- Desktop Case
- Windows 3.0
- DOS 5.0
- Impression Mouse



$1300

386SX-20
Super VGA Monitor
80 MB Hard Drive

- Intel 386SX-20
- 2MB exp. to 8MB
- 80 MB Quantum/ Maxtor Hard Drive
- 14" Mitac Super VGA Monitor (1024x768) .28dp
- Trident Super VGA Card w/1MB
- Teac 3.5 & 5.25 Floppy Drive
- IDE Hard/Floppy Controller
- AT I/O Card
- Clock/Calendar
- 101 Enhanced Keyboard
- Desktop Case
- Windows 3.0
- DOS 5.0
- Impression Mouse



$1200

COMPONENTS
We got it all!

- Hard Drives
- Tape Back-Ups
- Printers
- Monitors
- Modems
- Accessories
- Hard-to-Find Products

Our inventory is too long to list!
Please call us for the products you're looking for!

NETWORKING PRODUCTS

8 bit Arcnet (Star/Bus/Coax)	$48
8 bit Arcnet (Star/Bus/Coax/UTP)	52
16 bit Arcnet (Star/Coax)	69
16 bit Arcnet (Star/Bus/Coax/UTP)	75
8 port Arcnet Active Hub-Coax	145
8 port Arcnet Active Hub-UTP	175
8 bit Ethernet-Coax	89
16 bit Ethernet-Coax	125
8 bit 10BASE-T-UTP.	135
16 bit 10BASE-T-UTP	145
4 port 10BASE-T Fan-Out	199
10BASE-T Transceiver	59
Thin Ethernet Transceiver	55
14 port 10BASE-T Hub	590
Ethernet Cable (100') RG58-U	32
Custom Cable (25') RG58-U	18

The BOSS Guarantee

At Boss we believe in quality, and stand behind our products and service. To prove this point we offer a 5 year labor warranty on all systems. Plus all systems are FCC Class "B" approved to assure you quality and compatibility. Our commitment to excellence is uparalleled, and if you need personal service, we are here to listen to your needs.
Boss also offers a complete line of office automation products and networking services. Please call for complete details on these products and services. We thank you for your support and look forward to serving you.

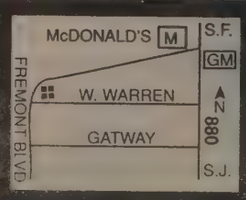
5 YEAR IN-STORE LABOR WARRANTY
WITH 1 YEAR PARTS WARRANTY

Prices Subject to Change without Notice.
Not Responsible for Typographical Errors

BOSS
COMMUNICATIONS & SYSTEMS CO.

46560 Fremont Blvd. #104
Fremont, CA 94538
HOURS: MON-FRI 9-6 SAT 10-4
(510) 623-1580
FAX (510) 623-1583

MasterCard VISA



ICS COMPUTERS

900 S. Winchester Blvd. #5 San Jose, CA 95128
(408) 241-9787 **Fax (408) 241-9789**

SALE SALE SALE SALE SALE SALE SALE SALE SALE

486 33 & 50 American made.
Quality you can trust! 2 YEARS WARRANTY

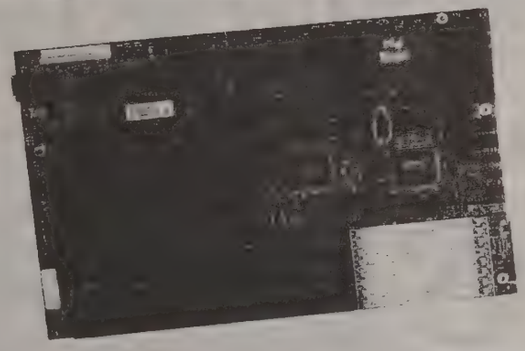
NICE 486DX 50 $949

64K EXP TO 256K
32Mb ON BOARD TOTAL 64MB
socket for 4167
Seven 16Bit/one 8Bit/one 32Bit
CLOCK CALENDER
BACKUP BATTERY

ZETEX 486/33 $599

64K CACHE EXP TO 256K
32M ON BOARD
CLOCK CALENDER
BACKUP BATTERY
4167 SOCKET
6 16 BIT/ 2 8 BIT
1 32BIT LOCAL BUS

MADE IN USA MADE IN USA



100%IBM Compatable

Supports DOS, Windows 3.0, OS2, Unix, Zenix, Novell, Network, Page Maker, Words, word Perfect, Lotus, Excel, Auto Cad, Pcad, Orcad..,
48 hours in house burn in

USED BY NASA, TELEDYNE, WELLS FARGO BANK, GTE, AT&T, APPLE COMPUTER.....

NICE 486 /50 64k Cache $1899
NICE 486/33 64K Cache $1699
2YRS Parts & Labor

- NICE 486/50 MOTHERBOARD
- 64K Cache
- 1.2 & 1.44 MB FD TEAC
  130MB HD 15MS
- SVGA 16BIT 512KMB
- SVGA MON 1024X768 .28
- 4MB RAM
- 2S/1P/1G
- IDE 2F/2D CONTROLLER
- MINI OR FLAT CASE
- 101 KEYBOARD
- CLOCK CALENDER
- BACKUP BATTERY

ZETEX 486/33 $1509
1YR PARTS & LABOR

- ZETEX 486/33 64K
- 1.2/1.44 MB FD TEAC
- 120 MB HD
- SVGA 16 BIT 512K
- SVGA MON 1024x768 .28
- 4MB RAM EXPANDABLE TO 32 MB ON BOARD
- 2S/1P/1G
- MINI OR FLAT CASE
- 101 KEYBOARD
- CLOCK CALENDER
- BACK UP BATTERY

ICS 386/33 64K CACHE $1199
1YR PARTS & LABOR

- ICS 386/33 64K CACHE
- 1.2/1.4 MB FD TEAC
- 120 MB HD
- SVGA 16 BIT 512K
- SVGA MON 1024x768 .28
- 4 MB RAM EXPANDABLE TO 32 MB ON BOARD
- 2S/1P/1G
- IDE 2F/2D
- MINI OR FLAT CASE
- 101 KEYBOARD
- CLOCK CALENDER
- BACKUP BATTERY

ICS 386/25 $995
1YR PARTS & LABOR

- ICS 386/25 MOTHERBOARD
- 1.2 MB FD TEAC
- 80 MB HD
- SVGA 16 BIT 512K
- SVGA MON 1024x768 .39
- 1 MB RAM EXPANDABLE TO 8 MB ON BOARD
- 2S/1P/1G
- IDE 2F/2D CONTROLLER
- MINI OR FLAT CASE
- 101 KEYBOARD
- CLOCK CALENDER
- BACKUP BATTERY

UPGRADE TO .28 MONITOR + $40

ICS 386SX 25 $935
1YR PARTS & LABOR

- ICS 386/SX MOTHERBOARD
- 1.2 MB FD TEAC
- 80 MB HD
- SVGA 16 BIT
- SVGA MONTOR
- 1 MB RAM EXPANDABLE TO 8 MB ON BOARD
- 2S/1P/1G
- IDE 2F/2D CONTROLLER
- MINI OR FLAT CASE
- 101 KEYBOARD
- CLOCK CALENDER
- BACKUP BATTERY

ICS 286/16 $749
1YR PARTS & LABOR

- ICS 286/16 MOTHERBOARD
- 1.2 MB FD TEAC
- 40 MB HD
- SVGA 16 BIT
- SVGA MON 640x480 .39
- 1 MB RAM EXPANDABLE TO 4 MB ON BOARD
- 2S/1P/1G
- IDE 2F/2D CONTROLLER
- MINI OR FLAT CASE
- 101 KEYBOARD
- CLOCK CALENDER
- BACKUP BATTERY

1. VGA
a. Super VGA 14" Monitor/card 1024x768 .39 Dot Pitch $298
b. Super VGA 14" Monitor/16 Bit 1024x768 .28 Dot Pitch $338
c. SVGA Noninterlaced 14" Monitor & Card 1024x768 .28 Dot Pitch $398

2. NONINTERLACED MONITOR
a. ARCHIE/1024x768 .28 dp 14"
b. ADI Microscan 3e 14" 1024x768 .28 dp
c. Sony 1304 1024x768 .25 dp
d. Addonics 1024x768 .28 dp 70 Hz
e. NEC 4fg
f. Mono 14"
g. Nanoa 1024x768

3. HARD DISK
1. 40 MB $ 205
2. 80 MB $ 309
3. 120MB $339
4. 130MB $349
5. 200MB $599
6. 338MB $919
7. 338 E/C $995
8. 670MB $1299
9. 60 MB $225

4. VEDIO CARD

TRIDENT 1MB $79
ORCHID IIS SIERRA $175
MONO $20

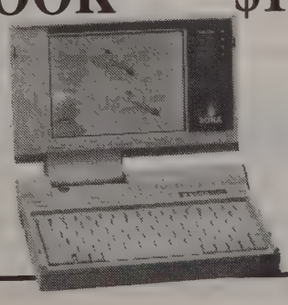
TEAC 1.2/1.44 FP $65
FAXMODEM $75
MODEM $39
MOUSE 400DPI $18
WINDOWS & LOGITECH MOUSE $79
TAPE BACKUP 120M $225
TAPE BACKUP 250M $275

30 DAYS MONEY BACK

100% IBM COMPATIBLE

386/SX-20 NOTEBOOK $1549

386/SX INTEL CPU
4MB RAM, 60MB HD
1.44 FD, MS DOS 5.0
WINDOWS 3.0
VGA SCREEN
LEATHER CASE
BATTERY PACK



MICROMARKETPLACE

ART COMPUTER TECH.,Inc.

Tel. (408) 946 • 7852 • Fax (408) 946 • 7892

SAVE 3% OFF
Buy more than 3 systems

save $$$$$
GUARANTEED LOWEST PRICE ON ALL ORCHID ORDIAMOND VGA CARD

Dealers Inquiries Welcome ▪ One year warranty/parts & labor on systems

NANAO 90801 + FAHRENHIET 1224 x 1024 1 Meg	SONY 1604 + ORCHID IIs with HC Ramdac	SONY 1304 + ORCHID IIs with HC Ramdac	NEC 3FGX 15" + Orchid IIs with HCRamdac	IMPRESSION or WEN 512K Paradise	VIEWSONIC 6 or ADI noninf. + Pixel or Art VI with Ramdac 32000 colors
$ 1245	$ 1155	$ 710	$ 785	$ 333	$ 450

	Mother Board + CPU	BASIC system	SPECIAL BASIC + 1.2 & 1.4 FD + MOUSE + 4 MB + 120-130HD (Conner/Maxtor/Quantum)		
			+ SVGA MONITOR Interl. (1024X 768) , .28P. + 16 BIT (512K)Paradise.	+ Noninter. MONITOR (1024X 768) , .28P. + 16 BIT (1Meg)Trident.	+ Viewsonic 6 or ADI Noninterl. (1024X 768) , .28P.+ 32.000 colors (1Meg)Art Design IV
386-25	$ 194	$ 364	$ 1207	$ 1284	$ 1344
386-33/64C exp. up to 256cache	$ 270	$ 420	$ 1280	$ 1354	$ 1414
386-40/64C exp. up to 256cache	$ 290	$ 434	$ 1300	$ 1374	$ 1434
486-33/64C exp. up to 256cache	$ 570	$ 734	$ 1560	$ 1635	$ 1695
486-50/64C exp. up to 256cache	$ 900	$ 1070	$ 1870	$ 1945	$ 2005
486-33EiSA	$ 1000	$ 1230	$ 1975	$ 2040	$ 2100

386DX / 486 Intel CPU BASIC SYSTEMS INCLUDED:

- OPTI write back cache 64C exp. up to 256cache exp. up to 32M on board
- Zero wait state
- New AMI Bios
- 1:1 IDE 2HD/2FD Controller
- 101 KB, Teac 1.2mb or 1.44mb FDD
- Enhanced case or Mini Tower case
- 2serial/1parallel/1game,
- Motherboard w/CPU and 1MB basic memory installed
- 8 EXPANSION SLOTS
- MATH COPROCESSOR SOCKET
- CLOCK/CALENDAR w/BATTERY BACKUP

NEW HARD DRIVES

40mb/28ms (IDE)	$ 200
60mb/18ms (IDE)	260
80mb/18ms (IDE) Maxtor	310
100mb/18ms (IDE)	330
120mb/16ms (IDE) Connor	370
130mb/15ms (IDE) Maxtor	380
200mb/16ms (IDE)	625
200mb/16ms (SCSI)	655
240mb/15ms (IDE) Quantum	655
340mb/15ms (SCSI or IDE) Maxtor	910
676mb/16ms (SCSI or IDE)	1,300

RAM &MATH COPROCESS.

4 MB - 70 Simm	145
4 MB - 80 Simm	135
1 MB - 60	40
1MB - 70	39
1 MB - 80	38
256K 80 Simm	10
387SX-20	120
387DX-33/25/20/16	145

KEYBOARDS

101 Enhanced Keyboard	$ 24
Maxiswitch	34
Keytronics	39
Focus 2001 / 3001 / 5001	44 / 64 / 74
Omnikey 102 / Ultra	84 / 114

VIDEO CARDS AND MONITORS

Monographic Card w/Print Port (MGP)	$ 11
Oak VGA-256K (800•600, 16-Bit)	38
Oak VGA-512K (1024•768, 16-Bit)	48
Trident 1MB (1024•768•256)	78
Ahead VGA Wizard Deluxe w/1MB (70Hz)	138
Video 7102i w/512KB	166
Video 7VRAM II w/1MB	338
Diamond Stealth	260
Diamond Speed Star w/Hi-Color	155
Orchid IIs/Fahrenheit 1280 w/1MB	240
Orchid Prodesigner IIs w/Hi-Color	165
Orchid IIs w/1MB with Sony 1034HG	708
Nanao 9070U (16", 1024•768, 0.28)	884
Nanao 9080i (16", 1280•1024, 0.28)	1,028
NEC 3FGX (15", 1024•768, 0.28)	675
NEC 4FG (15", 1024•768, 0.28)	798
NED 4DS (16", 1024•768, 0.28)	978
NEC 5D (20", 1280•1024, 0.31)	1,848
Sony CPD 1304(14", 1024•768, 0.25)	548
Sony CPD 1604 (17", 1024•768, 0.25)	975
Standard VGA (640•480) Monitor 0.51	198
Super VGA (1024•768) Monitor 0.39	234
Super VGA (1024•768) Monitor 0.28	278
Super VGA (1024•768, 0.28) Non-int 14"SVGA (1024•768, 0.39) Monitor with 16-Bit SVGA 512K Card	333
14" VGA Monitor w/16-Bit VGA Card	278
12" Mono Monitor w/MGP Card	238
14" Mono Monitor w/MGP Card	88
	108

HARD FLOPPY DRIVE ADAPTERS

IDE 2FD/2HD	$ 14
IDE 4FD/2HD	36
IDE 2FD/2HD with 2s/1p/1g	25
MFM 2FD/2HD	48
Ultrastor ESDI w/32K Cache (ISA)	168
Adapted SCSI 1542KB w/Kit (ISA)	274
Ultrastor SCSI 24F / 24C (EISA)	498 / 698
Ultrastor ESDI 22F / 22C (EISA)	498 / 698

PRINTERS

Panasonic KX-P1180	154
Panasonic KX-P1123	198
Panasonic KX-P112i	284
Panasonic KX-P1624	358
Cable for Printer	5

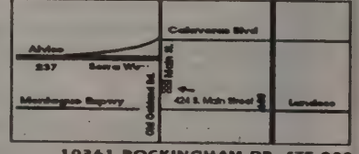
MISCELLANEOUS

AT I/O (2s/1p/1g)	$ 12
Serial CArd/Printer Card/Game Card	12
Windows 3.0 + Super Mouse II (400dpi)	68
Internal Modem 2400 Baud	44
Fax Modem (9600 Fax,2400 Modem)	84
3-Button Mouse	15
Logitech Mouseman Serial (400 dpi)	66
Logitech Mouseman Bus (400dpi)	73
Colorado Tape Backup DJ-10/20	208 / 278
Baby AT/Mini Tower Case w/200W PS	59
Medium Tower Case w/200W PS	99
Full Tower Case w/230W PS	139

ART COMPUTER TECH.386 and 486 Fully Compatible with WINDOWS 3.0, MS-DOS, AUTOCAD, OS/2,Novell, Banyan, UNIX SCO and other software.

- Prices & availability subject to change w/o notice
- We accept VISA & Mastercard
- Not responsible for typos
- Prices based on cash prices
- Government P.O. accepted
- Company Terms on credit approval

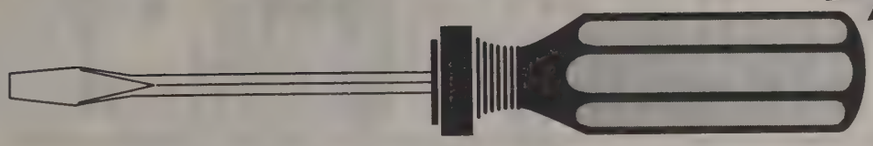
424 S. MAIN ST.
MILPITAS • CA 95035
TEL. (408) 946-7852
FAX. (408) 946-7892
BUS. HRS: M - F 9:30 - 6:00
SAT & SUN 11:30 - 4:00



10361 ROCKINGHAM DR. STE 800
SACRAMENTO, CA 95827
TEL: (916) 366 - 7128
FAX: (916) 366 - 9241
BUS. HRS: M - F 9:30 - 6:00
SAT.: 11:30 - 4:00

intel inside

USE THIS



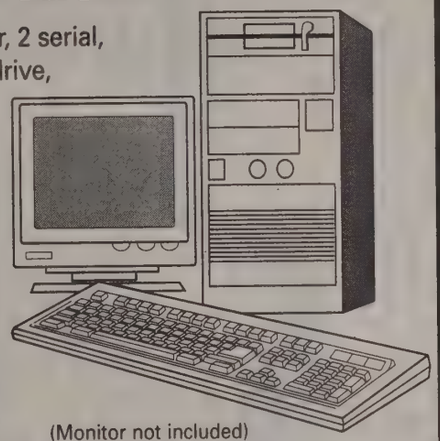
Grand Opening
Sacramento
5112 Madison Ave.
Phone: 916-349-8200 Fax: 916-349-8299
10am-6pm Mon-Fri 10am-6pm Sat & Sun

TO BUILD A COMPUTER IN JUST AN HOUR AND SAVE...

486SX-20MHz System Kit

Basic Features: 1MB standard, IDE HD/FD controller, 2 serial, 1 parallel and1 game ports. 1.2M or 1.44M floppy drive, 101 keyboard, Mini Tower case with 200W power supply
(Upgradable to 486DX)

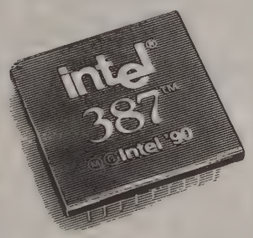
$C50



$599

Ask for our combo floppy drive
Trident SVGA card (1024 x 768) **$45**
SVGA non-interlace monitor **$340**

(Monitor not included)

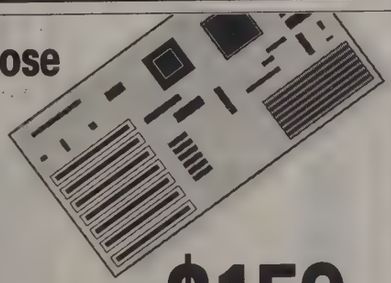


intel
The Computer Inside.™

Intel Math Co-processor

80387SX 16	$140
80387SX 20	$150
80387DX 20/25/33	$215

386/486 Multipurpose Motherboard



Your choice of 386DX, 486SX, 486DX 20, 25 or 33 MHz operation, seven expansion slots, Award BIOS, supports up to 32MB on-board RAM.

$159

(CPU optional) Dealer inquiries welcome

SYSTEM KITS

286-16MHz	$265
386SX-16MHz	$355
386SX-25MHz	$375
386DX-25MHz	$505
386DX-33MHz	$585
386DX-25MHz 64K caches	$565
386DX-33MHz 64K caches	$620
386DX-40MHz 64K caches	$630
486SX-20MHz 64K caches	$640
486SX-25MHz	$760
486DX-33MHz	Call
486DX-33MHz 128K caches	Call

Financing Available

VISA and MasterCard accepted

(Advertised prices based on 3% cash purchase discount)

(Price subject to change without notice.Check for our everyday low price and other new products)

OTHERS:

286-16MHz motherboard	$75
386SX-16MHz motherboard	$145
386SX-25MHz motherboard	$165
386-25MHz motherboard	Call
386-33MHz/64k cache	Call
486SX-20MHz motherboard	$390
486SX-20MHz motherboard 64K	$415
486-33MHz motherboard 128K	Call
Controller-IDE 2H/2F/2S/1P/1G	$20
Genoa 6300 SVGA card	$85
SVGA card (800 x 600)	$34
2400 baud internal modem	$45
2400/9600 baud Fax modem	$85
Serial mouse	$15
Mini Tower case	$65
AT 101 Enhanced Keyboard	$27
Wordstar 2000 plus	$20
DOS 5.0/4.01/3.3 (OEM) (with system only)	$50
Windows 3.0	$44

Shareware available

The Intel Inside Logo is a trademark of Intel Corporation
All company names and products are trademarks or register trademarks of their respective companies
Not responsible for any typographical errors
Libre Ad v 17 (3/92)

Sound Commander II with Monologue (Text to speech program)

$89

San Francisco	San Mateo	Santa Clara	Pleasanton	Fremont
415-584-1122	415-578-1614	408-988-4125	510-416-1390	510-438-0402
Fax: 415-584-1123 1959 Ocean Avenue, San Francisco, CA 94127 Mon-Fri 10 am to 6 pm Sat 10 am to 6 pm	2505 S. El Camino Real San Mateo, CA 94403 (Cross Street: 25th Ave) Mon-Sat 10 am to 6 pm	Fax: 408-727-1760 Garrett Business Center 3375 Scott Blvd. Suite 338 Santa Clara, CA 95054 Mon-Sat 10 am to 6 pm	Fax: 510-416-1477 5673 West Las Positas. Suite 211 Koll Business Center Pleasanton, CA 94588 Mon-Fri 10 am to 7 pm Sat 10 am to 5 pm	Fax: 510-438-0489 47266 Benicia Street, Fremont, CA 94538 Mon-Sat 10 am to 6 pm (Same entrance as Eltech Research Inc.)

Libre-
Service Computer Inc.

MICRO MARKETPLACE

SYSTEMS

286-12.....$278
286-20.....$295
386SX20/25.....$331/344
386DX25.....$403
386DX25C32.....$416
386DX33C64.....$459
386DX40C64.....$476
486SX20.....$531
486DX33C64.....$791
486DX33C256.....$841
486DX50C256.....$1109
Including: Case, 1MB, IDE, I/O, 1.2 or 1.44 Teac FDD, 101K KB

ADD --
HDD 40/80/120.....$198/285/359
Mono Display.....$87
VGA .39 Std.....$249
SVGA .28.....$312

Complete black Systems available

NOTEBOOKS

Bondwell (Made in USA)
SX16, 1MB, 40MB Laptop.....$1130
SX16, 2MB, 60MB Laptop.....$1355
SX25, 2MB, 60MB NBook.....$1845
Top Link (Taiwan)
SX20, 2MB, 60MB NBook.....$1585
Clover 386-33,4M,80M NB....$2985

TERMINALS

PC based Terminals --
Network ready, Remote Boot, 1MB, diskless, 12" Mono, KB.
286-12 PC.....$410
386SX25 PC.....$479
386DX25 PC.....$560

WYSE Terminals --
WYSE 30+ w/Keyboard.....$305
WYSE 50 w/Keyboard.....$409
WYSE 60 w/o Keyboard.....$315
Call for other WYSE products.

SERVERS

Ask for free brochure on ASA Thoroughbred family of servers.
Novell, UNIX or CAD pre-installed.

ASA Diamond Servers --
486-33 Mylex EISA, 8MB, 213 SCSI CachingDrive and Card, 33MB/sec I/O, 25MB/sec Disk Xfer.....$3195

486-33 Cache Comp ISA, 8MB, 213 MB SCSI w/ Adaptec 1542....$2195

UNIX and Novell Engineering support available....

MOTHERBOARDS

Imports --
XT-10 w/640K.....$66
286-12/20.....$62/79

386SX-20.....$119
386SX-25.....$132

386DX-25.....$191
386DX-25 w/32K Cache.....$204
386DX-33 w/64K Cache.....$247
386DX-40 w/64K Cache.....$264

486SX-20 Ugrdble to DX.....$319
486DX-33 w/64K Cache.....$579
486DX-33 w/256K Cache.....$629
486DX-33 EISA 64K.....$1165
486DX-50 w/256K Cache.....$897

US Made --
MYLEX
386SX-16 w/ I/O.....$179
386DX-33 w/ I/O, IDE 64K.....$575

486DX-33 w/ IDE, I/O 128K.....$885
486DX-33 EISA 128K.....$1456

Cache Computers (2 yrs)
486DX-33 ISA IDE, IO, 128K.....$759

Atronics
386DX-33 64K.....$309
486DX-33 64K.....$690
486DX-33 256K.....$735

CASES/PS

XT Turbo w/ PS.....$55
Baby Desk/Tower w/ PS.....$63
Medium Tower w/ PS.....$89
Full Tower w/250 PS.....$109

Rack Mount.....$259
File Server w/ 400W PS.3 Fans... 12 F/HDD, black/beige.....$549
BLACK
Baby Desk/Tower w/PS.....$91
Medium w/PS.....$135
Full Tower w /PS.....$152

See elsewhere for Black matching Keyboard, Mouse, SVGA Monitor.

External HDD Cases
1FH/2HH...65W.....$79
2FH/4HH...65W.....$139
Power Supplies
XT Power Supply.....$38
PC Power XT Turbo Cool 230.....$85
220 AT.....$48
PS2 200W.....$42
PS2 300 W.....$99
Full Tower 230W.....$61
Full Tower 300/400.....$80/154

UPS's see in Networking Products

CONTROLLERS

IDE 2FD/2HF.....$15
IDE 4FD/2HD.....$33
IDE w/ 2SPG.....$24
IDE Caching UltraStor.....$235
MFM ST21M.....$39
MFM DTC.....$59
RLL 4FD/2HD.....$69
SCSI
DTC.....$119
Future Domain Comp.....$54
ADAP 1522B/Kit.....$129/157
ADAP 1542B/Kit.....$239/269
ADAP 1740 EISA.....$469
DTC EISA Caching.....$485
DPT Smart Cache Plus.....$550
MYLEX EISA Caching.....$599
ESDI
DTC.....$119
Maple 64K.....$107
Ultra 12F 32K.....$164
Ultra 22F Caching EISA.....$449
ADAP 2322KE.....$189

XT FDC360/1.2.....$13/24
XT HDC.....$45

ADAPTERS

MGP.....$12
Color Card.....$23
VGA/SVGA
VGA 256k.....$33
Oak/Trident 512.....$49
Trident 1MB.....$75
Tseng 1MB.....$99
Orchid II, IIs.....$149
Orchid IIs w/ 32K Color.....$175
Orchid Fahrenheit.....$269
Genoa 1MB 32K Color.....$159
V7 VRAM II 1MB.....$329
Diamond Stealth.....$269
Mylex GLI.....$279
ATI Ultra Grpx 512K.....$399
ATI Ultra Grpx 1MB.....$445

For Accelerator Boards see Engineering section.

Terms
2% off on items that are not in stock & you are willing to wait for them.
COD, FOB Santa Clara.

Besides Purchase Orders, Credit Cards, Cheques, we accept Cash too..

Warranty: Parts -- One year Manufacturers warranty, some parts may have longer term. Labor -- Three years on systems assembly only. Corporate Leasing / Personal Financing available.

DRIVES

Floppy
Teac 1.2/1.44.....$58/53
IDE
CON 20.....$109
ST351/CON/Q 40.....$198
CON/Q/WD 80.....$285
CON/Q/MXT 120.....$359
ST3144 130.....$369
Quan 170.....$445
CON 170.....$425
CON/MXT 200.....$575
Quan 240.....$629
MXT 340.....$919
Fuj/CON 425MB/540MB....$1120/1220
MFM/RLL
ST40.....$217
ST80.....$317
ST66 RLL.....$267
ESDI
ST 172/338.....$737/1167
MXT203.....$757
MXT338/670.....$1067/1299
SCSI
CON 40.....$209
CON/MXT 120.....$345
CON/MXT 204.....$579
CON 540.....$1245
ST 89 5.25".....$287
ST 172/338 5.25".....$607/1057
ST 4766N 680.....$1299
ST 1.2GB.....$1725
MXT 81/157....5.25".....$297/827
MXT 213/340.....$587/925
MXT 670.....$1322
MXT 1G.....$1825
FUJ340/425/540.....$1063/1158/1220
FUJ 680.....$1245
FUJ 1G.....5 yr.....$1795
ST/MXT 1.7GB.....$2195

REMOVABLE

Syquest 44MB Dr.....$318
Syquest 88MB Dr.....$445
Bernoulli 44 Insider.....$820
Bernoulli 90 Insider.....$840
Cartridges see storage media

IDE: Upto 1GB removable kits.....$39

TAPE

Colorado 120MB.....$199
Colorado 250MB.....$259
Colorado 700MB.....$750
Archive 525S.....$795

NOTEBOOK DRIVES

40MB 2.5" IDE.....$239
60MB 2.5" IDE.....$314
80MB 2.5" IDE.....$

MONITORS

Mono 12".....$77
Mono 14".....$103
Mono 9" VGA.....$120
Mono 14" VGA.....$117

Black SVGA 1024,.28.....$309
SVGA PBell Made in Japan.....$327
VGA 640,.39.....$221
VGA 640,.28.....$269
SVGA 1024,.28..Hyundai.....$279
SVGA CTX Autoswitch.....$299
SVGA V4E 1024,.28.....$317
M/Syn V3.....$447
V5.....$547
SVGA NI V6.....$367
V7.....$1220
V8.....$1765
Samsung 17".....$789

see our engineering section for more complete list.

STORAGE MEDIA

Floppy 1.44 Bulk.....$.79
Floppy 1.2 Bulk.....$.49
Tape DC2000XL.....$18
Tape DC2120 250MB.....$19
DAT 4mm 60/90 mtr.....$19/29
DAT 8mm 54/112 mtr.....$18/24
Syquest 44MB Cart.....$73
Syquest 88MB Cart.....$119
Bernoulli 44MB 3Pk.....$315
Bernoulli 90MN 3Pk.....$442

SERVICES

On-Site Repairs: per year.
1-5 PCs/site.....per PC.....$200
6-10 PCs/site.....per PC.....$175
10-50 PCs/site....per PC.....$150
over 50 PCs/site...per PC.....$100
any generic PC.

In-Plant Repairs:
We have 3 years assembly warranty on the systems built by **ASA.**

Parts and modules have their own manufacturers warranty - ask for details

$35 for diagnosis and reassembly on out of warranty **ASA** or non-ASA machines.

Upgrades minimum.....$5

Custom integration for **Industrial PCs**

please inform us of any typos.

"Integration and service with pride"

SOFTWARE

Norton Anti Virus 2.0.....$89
Norton Utilities 6.01.....$114
DBASE IV 1.1.....$470
FOXPRO 2.0.....$490
Carbon Copy Plus 6.0.....$110
Bitfax for Windows util.....$55
Lantastic for Win util.....$165
Lotus 1-2-3 for windows.....$403
Quattro Pro 3.0.....$305
MS Excel 3.0 for windows.....$301
MS Works 2.0.....$95
Word Perfect 5.1.....$256
MS Word 2.0 for windows.....$305
Adobe type manager.....$65
Corel Draw 2.0.....$397
Design CAD 3,1 3D.....$218
SCO UNIX DEV sys3.2.2.....$750
SCO UNIX m user 3.2.2.....$680
DOS 3/4/5 w/sys.....$36/42/52
DOS 6..DR.....$69
Windows 3.0 w/ sys.....$49
Windows 3.0 w/mse w/sys.....$64
Windows 3.1.....$95
DacEasy 4.1.....$84
ACCPAC BPI.....CALL
ACCPAC PLUS.....CALL
CRYSTAL SERVICE - ACCPAC SUPPLIMENTS .....CALL
[sales and support on all accpac modules]....

SPECIALS

US Made 486-33,
1MB RAM, 1 Teac Floppy Drive
130MB SGT3144 HDD
101 Keyboard
Color 14" SVGA .28
Baby Case

"FCC B"
.....$1569

386-33 64K, 1MB
Mini Tower, 1 Teac Drive
80 MB IDE, Cont.
101 Keyboard
Mono 14" VGA

"FCC B"
.....$999

386SX25, 1MB
Mini Tower, 1 Teac Drive
40 MB IDE, Cont.
101 Keyboard
12" Mono Display

"FCC B".....$699

ASA COMPUTERS

ENGINEERING CAD/CAM

Monitors

Hitachi
15MVX 15" FST .28, LMF,70Hz...$599
CM2085 20" 1280 Anti Glare.....$1625
CM2087 20" 1280 72Hz.Micro....$1859
CM2187 21" FST 1600 Micro.....$2415
Toshiba
P17CU01 17",FST,1024,70Hz.....$975
P17CS01 17",FST,1280,.26.....$1310
P21CM00 21",FST,1280.....$2129
Sony
CPD1304S 14",*MPRII*,70Hz.....$559
CPD1604S 17".....$1039
GDM1936 20" Trinitron.....$2489
Idek
MF5217 17",1024,70Hz.....$1010
MF5221A 21",LMF,1280,72Hz....$2020
MF5421A 21",LMF,1600,.26.....$2445
Taxan
MV550 15",FST,.28,70Hz.....$599
MV850 17",FST,70Hz.....$929
Nanao
9080I 16",1280,.28,*MPRI*.....$1045
F550I 17",FST,1280,.28,*MPRII*...$1190
T560I 17",Trin,1280,.26,*MPRII*....$1909
T660I 20"Trin,1280,72Hz,*MPRII*.$2549
Magnavox
20CM64 20",1280NI,.31.....$1345
NEC
3FGX 15",.25.....$639
4FG 15",.25,Microp.....$769
5FG 17",.26,Microp.....$1389
6FG 21",.26,Microp.....$2859

GRAPHIC ADAPTERS
NUMBER NINE #9GXi
L22 Win,T34020,1280,72Hz,16C..$944
L23 ACAD,T34020,1280,16C.....$1228
L24 Win,T34020,1280,256C.....$1304
L25 ACAD,T34020,1280,256C...$1446
HERCULES
GOLD 16, Ti34010.....$386
GOLD 16+2, Ti34010.....$509
GOLD 24, Ti34010, 24 Bit.....$456
GOLD 24+2, Ti34010, 24 Bit.....$575
VMI
X/Series 16,1280,72Hz,DPC.....$1497
X/Series 256,1280,72Hz,DPC....$1797
Cobra Sp,1024,72Hz,Rend Rdy.$1077
Design Master, 32k Color.....$315
MYLEX
GXE020B Ti34020.....$1045
DIAMOND COMPUTERS
Speedstar +.....$152
Speedstar Hi-Color.....$160
STEALTH 1MB.....$269
GENOA
7900 16m Color (24 bit).....$219
7860 1MB Hi-Color.....$155
8860 S3 Chip Hi-color.....$259

Sorry,we don't have the Monitors, Plotters, Digitizers, & Scanners on Display. Please treat these as Catalog orders.

VIDEO BUNDLES

MONITOR, CARD & CABLE
Hitachi CM2087/X-Series.....$3288
Idek MF5117/Dia Stealth.....$1214
Toshiba P17CU01/Dia Stealth.....$1219
SONY 1304S/Speedstar+.....$695
Hitachi CM2085/Dia Stealth.....$1856
Hitachi 15MVX/Speedstar+.....$739
Nanao T660i/#9GX L22.....$3440
Magnavox 20"/Dia Stealth.....$1595

PLOTTERS DIGITIZERS SCANNERS

PLOTTERS
HOUSTON INSTRUMENTS
Im Maker 1117,A/B,8 Pen,HPGL...$739
DMP-161 A-D, 8 Pen, HP-GL/2...$2986
DMP-162 A-E, 8 Pen, HP-GL/2...$3896
DMP-162R A-E, 8 Pen, Roll Med.$5196
(Thru March 31st. Free Summa 12x12.. ..with DMP plotters)
ENCAD
SP600 A/B, 6 Pen Desktop.....$585
SP1800 A/D, 8 Pen, Sheetfeed....$2480
SP2800 A/E, 8 Pen, Sheetfeed....$3080
SP4820 A/D, 8 Pen, Roll Feed....$4295
SP4830 A/E, 8 Pen, Roll Feed.....$4648

DIGITIZERS
SUMMAGRAPHICS
II 12x12 w/16btn or 4bt & Pen.....$324
II 12x18 w/16btn or 4bt & Pen.....$579
KURTA
XLP 12x12 w/4btn & Pen.....$295
XLP 12x18 w/16btn or 4btn,Pen...$529
IS/ONE 12x12 4btn/12btn/Pen.....$339
IS/ONE 12x17 4btn/12btn/Pen.....$575
(IS/ONE also available w/Cordless.. ...4btn or Pen at same price)

SCANNERS
AERO/ARTEC
Hand BW 16 Greyscales.....$99
Hand 256 Greyscales.....$199
MICROTEK
Edge Feed MS-II Omni, Kit.....$729
Flatbed 600G Photostyler, Kit.....$1056
Flatbed 600Z Photostyler, Kit.....$1344
THE COMPLETE PC
1/2 Page 400.....$196
1/2 Page Greyscale.....$256
Page w/Calera WS.....$589
Complete Flatbed.....$978
ARTISCAN - (Flatbed)
3000C 300dpi, 24bit.....$995
6000C 600dpi, 24bit.....$1095
8000C 800dpi, 24bit.....$1321
Slide Scan Kit.....$495
Slide Manager Software.....$185

ASA COMPUTERS

NETWORKING PRODUCTS

ADAPETRS/KITS
NOVEL ORIGINAL
NE2000 16bit Thin/Thick.....$169
ADVANCED LAN NETWORK
NE2000 Comp 16bit Thin/Thick....$107
NE1000 Comp 8bit Thin/Thick.....$94
Arcnet 8/16 bit.....$59/69
WESTERN DIGITAL
16 bit Ethernet Thin/Thick.....$169
8 bit Ethernet Thin/Thick.....$149
3COM
3C503 8 bit Thin/Thick.....$194
3C507 16 bit Thin/Thick.....$294
D-LINK
16 bit 10BaseT.....$129
MYLEX LNE.....$327
ARTISOFT
AE-2 Lantastic Kit.....$459
AE-2 16 bit Adapter.....$199
Z-2 Lite Kit 2 Stations.....$94

POCKET LAN ADAPTERS
ADVANCED LAN NETWORK
CN50ET 10BaseT.....$199
CN50E Coax 10Base2.....$199
CN50A Arcnet.....$149

HUBS
D-LINK 12 Port 10BaseT.....$585
D-LINK 4 Port 10BaseT.....$295
D-LINK DE-1500 w/SNMP.....$920
Comp 12 Port 10BaseT.....$535
INTELLIPORTS
COMPUTONE
Advantage 8 ATV8-DB25.....$515
Intelliport AT8-DB25.....$625
Intelliport AT16-DB25.....$1088

UPS's

AMERICAN POWER
APC 200VA, SB, 5 Min.....$138
APC 400VA, SB, 15 Min.....$189
APC 600VA BK, SB, 10 Min.....$304
APC 800VA, SB, 10 Min.....$570
APC 1200VA, SB, 10 Min.....$793
APC 750VA, OL, 15 Min.....$1299
APC 1500VA, OL 10 Min.....$CALL

NOVELL NETWARE

Ver 2.2 5 User.....$494
Ver 2.2 10 User.....$1095
Ver 2.2 50 User.....$1929
Ver 3.1 10 User.....$1377
Ver 3.1 20 User.....$1929
Ver 3.1 100 User.....$3861
Ver 3.1 250 User.....$6897
LITE.....$69

NETWORK CABLES
ETHERNET RG58 CABLES
Readymade w/Conn 10'/25'/50'.. .....$7/10/16
1000' SPOOL.....$99
Terminators/All Conn.....$3 ea.

MULTI MEDIA

Sony CD-ROM 531 Int Kit.....$375
Sony CD-ROM 541 Int SCSI Kit...$435
7 Pak..[Ency, Nat Geog, Mag Rack, ...Ref Lib, Atlas, Timetable].....$164
ASA Catalog 150 Titles..Free
SOUND BOARDS/KITS
BROWN-WAGH
Sound Blaster Pro.....$198
MEDIA VISION
Thunder Board w/Speakers.....$109
Pro Audio Spectrum.....$261
Multi-Media Upgrade Kit w/Int CD..$769
CREATIVE LABS
Multi-Media Upgrade Kit Internal....$605
Multi-Media Upgrade Kit External...$675
CURTIS MATHES
Sight, Sound & Action CD-ROM, 3 pkg. ...w/Kit Internal/External.....$340/425

COMPUTER VIDEO
PROCOLOR
Mutli-Source Image Capture.....$637
..plus 100 Multiple Frames.....$785
VGATV VGA to NTSC/S-VHS $489
LOGITECH
Fotoman.....$569
Scanpad.....$15

VIDEO MONITORS
SONY
PVM-2030 BS21",Color,640x200..$985
PVM-2530 BS27",Color,640x200.$1295

COMMUNICATIONS

MODEMS/FAXES
2400 Modem Int.....$40
2400 Modem Ext.....$74
2400 Pocket Modem.....$84
96/24 FAX/Modem.....$75
BITFAX for Windows Software.....$48
THE COMPLETE PC
The Complete Communicator.....$335
US ROBOTICS
9600 V.32 V.42bis.....$339
14,400 CHST/PC-N Int V.42.....$553
14,400 HST Courier Dual V.32bis.$790
ZOOM 14,400.....$279

MAINFRAME LINKS
IRMA 3 Convertible.....$435
IRMA Workstation for Windows....$370

PRINTER SHARING
AUTO SWITCHES
2 Computers to 1 Printer.Bi-dir.....$69
4 Computers to 1 Printer.Bi-dir.....$89
MANUAL SWITCHES
2 Computers to 1 Printer.....$14
4 Computers to 1 Printer.....$19
Printer sharing Networks - low cost alternatives to LAN - Please fax your specific requirements for a proposal..

PRINTERS

Pansonic
KXP4420 8ppm,300dpi,22fonts.....$735
KXP4450i 11ppm,300dpi,28f.....$1135
KXP4455 11ppm,300,Pst scrpt...$1835
IBM
Laser 5E,4ppm,300dpi.....$1137
Laser 6,6ppm,300dpi.....$1425
Laser 10,10ppm,300/600dpi.....$1735
Laser 10L 10ppm,300/600dpi.....$2355
Okidata
OL400, 4ppm, 300dpi.....$609
w/ 2.5MB.....$735
OL800, 8ppm, 300dpi.....$899
w/ 4.5MB.....$1119
Oki ML320 320cps dot matrix.....$320
Citizen
200GX 9 pin.....$163
GSX130 24 pin.....$255
color option works on both.....$42
GSX145 24 pin wide.....$395
Notebook Pr. CTZPN48 w/bat.....$359
Pr Cable 6"/15".....$5/7

Laser Extension Memory
HP IIP,IIIP..1/2/4MB.....$79/123/214
HP II, IID..1/2/4MB.....$90/134/224
HP IIISi..1/4MB.....$79/235
Canon LBP II..2/4MB.....$134/224
Pan 4420,4450i..1/2/4MB..$91/135/225
Pan 4450..1MB.....$149
Pan 4455..1/2MB.....$146/190
Oki400..1/2MB.....$91/135
Oki 800,820..1/2/4MB.....$103/147/237
Oki 830,840..1/2MB.....$141/187
Epson 6000 1/2/4MB.....$105/149/239
Epson7000 1.5/2.5MB.....$131/175

MATH-COs

FAST MATH-COs by IIT
2C87-10.....$45
2C87-XL.....$79
3C87SX-16.....$99
3C87SX-20.....$110
3C87SX-25.....$123
3C87-25.....$139
3C87-33.....$149
3C87-40.....$184
CYRIX
ALL.....CALL
INTEL
ALL.....CALL

KEYBOARDS, MICE

SEJIN Soft/Mechanical.....$26/34
MaxiSwitch/M-Click.....$35/37
KeyTronic/OMNI 102.....$42/55
BLACK 101.....$44
S-Mouse/TBall.....$18/25
LogiTech Ser/Par.....$62/72
Microsoft Original.....$87
BLACK SERIAL.....$27

Main Branch

ASA Computers
2354 Calle Del Mundo
Santa Clara, CA 95054
Tel: [408] 496-6853
Fax: [408] 988-0359

Santa Cruz/Capitola

BOA Computers
2121 41st Ave # 106
Capitola, CA 95010
Tel: [408] 479-9982
Fax: [408] 479-9983

San Jose

ISC Computers
5489 Snell Ave.
San Jose, CA 95123
Tel: [408] 227-2286
Fax: [408] 227-3086

Pleasant Hill [new location]

STI Computers
Call For Directions
Tel: [510] 256-9938
Fax: [510] 256-9983

Novell Athizd Field Service
La Roy Smith.....[408] 685-5429[P]

Call for our complete catalog. Also complete catlg on CD ROMs. Resellers call for reseller price list. Dealers call [408] 988-2973 for our dealership program.
All branches listed here are independently owned and operated, and are responsible for their own liabilities...

HOURS
MON - FRI: 9AM TO 6PM.
SAT (SALES ONLY)...10AM TO 5PM

MYLEX.....COLORADO....CONNOR
TEAC....DTC.....ADAPTEC.....ULTRA
SYQUEST..MAXTOR.QUANTUM
SUMMA....CALCOMP.....CARLISLE
NOVELL...OKI...CITIZEN....HITACHI
SEAGATE.....US ROBOTICS
LANTASTIC..SAMSUNG...ORCHID
ATI...V7...#9..LOGITECH..TOSHIBA

ASA COMPUTERS

MICRO MARKETPLACE

MICRO MARKETPLACE

BERLIN TECHNOLOGY, Inc.

1478 - A Fruitdale Ave. • San Jose • CA 95128
Tel. 408 - 297 - 7138 • Fax. 408 - 297 - 7302

- One year warranty parts & labor on systems

386DX / 486 Intel CPU BASIC SYSTEMS INCLUDED:

- OPTI write back cache 64C exp. up to 256cache exp. up to 32M on board
- Zero wait state
- New AMI Bios
- 1:1 IDE 2HD/2FD Controller
- 101 KB, Teac 1.2mb or 1.44mb FDD
- Enhanced case or Mini Tower case
- 2serial/1parallel/1game,
- Motherboard w/CPU and 1MB basic memory installed
- 8 EXPANSION SLOTS
- MATH COPROCESSOR SOCKET
- CLOCK/CALENDAR w/BATTERY BACKUP

OPTION A
1.2 & 1.4 Teac + 4Meg
SVGA Interlace WAN
or Impression (1024x786)
.28 dot pitch, 512K Paradise
Mouse(microsoft-compa.)

OPTION B
1.2 & 1.4 Teac + 4Meg
NSVGA NONINTER. MONITOR
or Impression (1024x786)
.28 dot pitch,
1Meg Trident 256 colors
Mouse (microft-compa.)

OPTION C
1.2 & 1.4 Teac + 4Meg
NSVGA Noninterlace
Viewsonic 6 - .28 dotpitch
1Meg Artdesign VI 32000 T-L
Mouse(microsoft-compa.)

OPTION D
1.2 & 1.4 Teac + 4Meg
NSVGA NONITER. MONITOR
Sony 1304 HD or Viewsonic 5+
1Meg Orchic Pro IIs
Mouse(microsoft-compa.)

SPECIAL 387-33
$ 995
with system only

SYSTEM	BASIC	OPTION	80Meg	120Meg	200Meg
386 -33 64 Cache exp. 32 Meg on board	$ 422	no. OP.	$ 724	$ 786	$ 994
		OP. A	$ 1242	$ 1304	$ 1512
		OP. B	$ 1329	$ 1391	$ 1599
		OP. C	$ 1379	$ 1441	$ 1649
		OP. D	$ 1614	$ 1676	$ 1884
386 -40 64 Cache exp. 32 Meg on board	$ 435	no. OP.	$ 737	$ 799	$ 1007
		OP. A	$ 1255	$ 1317	$ 1529
		OP. B	$ 1342	$ 1404	$ 1612
		OP. C	$ 1392	$ 1454	$ 1662
		OP. D	$ 1627	$ 1689	$ 1900
486 -33/64 Cache exp. 32 Megon board	$ 735	no. OP.	$ 994	$ 1056	$ 1264
		OP. A	$ 1512	$ 1574	$ 1782
		OP. B	$ 1600	$ 1661	$ 1869
ADD $300 TO UPGRADE 486-50		OP. C	$ 1649	$ 1711	$ 1919
		OP. D	$ 1885	$ 1964	$ 2154

HARD / FLOPPY DRIVE ADAPTERS

IDE 2FD/2HD	$ 14
IDE 4FD/2HD	36
IDE 2FD/2HD with 2s/1p/1g	25
MFM 2FD/2HD	48
Ultrastor ESDI w/32K Cache (ISA)	168
Adapted SCSI 1542KB w/Kit (ISA)	274
Ultrastor SCSI 24F / 24C (EISA)	498 / 698
Ultrastor ESDI 22F / 22C (EISA)	498 / 698

PRINTERS

Panasonic KX-P1180	154
Panasonic KX-P1123	198
Panasonic KX-P112i	284
Panasonic KX-P1624	358
Cable for Printer	5

MISCELLANEOUS

AT I/O (2s/1p/1g)	$ 12
Serial CArd/Printer Card/Game Card	12
Windows 3.0 + Super Mouse II (400dpi)	68
Internal Modem 2400 Baud	44
Fax Modem (9600 Fax,2400 Modem)	84
3-Button Mouse	15
Logitech Mouseman Serial (400 dpi)	66
Logitech Mouseman Bus (400dpi)	73
Colorado Tape Backup DJ-10/20	208 / 278
Baby AT/Mini Tower Case w/200W PS	59
Medium Tower Case w/200W PS	99
Full Tower Case w/230W PS	139

VIDEO CARDS AND MONITORS

Monographic Card w/Print Port (MGP)	$ 11
Oak VGA-256K (800•600, 16-Bit)	38
Oak VGA-512K (1024•768, 16-Bit)	48
Trident 1MB (1024•768•256)	78
Ahead VGA Wizard Deluxe w/1MB (70Hz)	138
Video 7102i w/512KB	166
Video 7VRAM II w/1MB	338
Diamond Steelth	260
Diamond Speed Star w/Hi-Color	155
Orchid IIs/Fahrenheit 1280 w/1MB	240
Orchid Prodesigner IIs w/Hi-Color	165
Orchid IIs w/1MB with Sony 1034HG	708
Nanao 9070U (16", 1024•768, 0.28)	884
Nanao 9080i (16", 1280•1024, 0.28)	1,028
NEC 3FGX (15", 1024•768, 0.28)	675
NEC 4FG (15", 1024•768, 0.28)	798
NED 4DS (16", 1024•768, 0.28)	978
NEC 5D (20", 1280•1024, 0.31)	1,848
Sony CPD 1304(14", 1024•768, 0.25)	548
Sony CPD 1604 (17", 1024•768, 0.25)	975
Standard VGA (640•480) Monitor 0.51	198
Super VGA (1024•768) Monitor 0.39	234
Super VGA (1024•768) Monitor 0.28	278
Super VGA (1024•768, 0.28) Non-int 14"SVGA (1024•768, 0.39) Monitor with 16-Bit SVGA 512K Card	278
14" VGA Monitor w/16-Bit VGA Card	238
12" Mono Monitor w/MGP Card	88
14" Mono Monitor w/MGP Card	108

NEW HARD DRIVES

40mb/28ms (IDE)	$ 200
60mb/18ms (IDE)	260
80mb/18ms (IDE) Maxtor	310
100mb/18ms (IDE)	330
120mb/16ms (IDE) Connor	370
130mb/15ms (IDE) Maxtor	380
200mb/16ms (IDE)	625
200mb/16ms (SCSI)	655
240mb/15ms (IDE) Quantum	655
340mb/15ms (SCSI or IDE) Maxtor	910
676mb/16ms (SCSI or IDE)	1,300

RAM &MATH COPROCESS.

4 MB - 70 Simm	145
4 MB - 80 Simm	135
1 MB - 60	40
1MB - 70	39
1 MB - 80	38
256K 80 Simm	10
387SX-20	120
387DX-33/25/20/16	145

KEYBOARDS

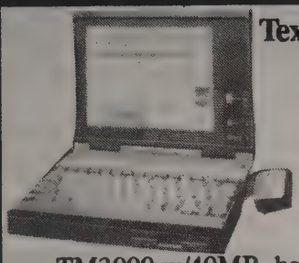
101 Enhanced Keyboard	$ 24
Maxiswitch	34
Keytronics	39
Focus 2001 / 3001 / 5001	44 / 64 / 74
Omnikey 102 / Ultra	84 / 114

BERLIN TECHNOLOGY

386 and 486 Fully Compatible with WINDOWS 3.0, MS-DOS, AUTOCAD, OS/2, Novell, Banyan, UNIX, SCO and other software.

- Prices & availability subject to change w/o notice
- We accept VISA & Mastercard
- Not responsible for typos
- Prices based on cash prices
- Government P.O. accepted
- Company Terms on credit approval

SERVING YOU SINCE 1982



Texas Instruments

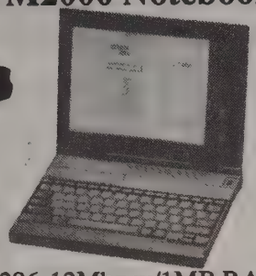
TravelMate ™3000
Notebook Computer

New Lower Prices

TM3000 w/40MB hard disk	$1,829.00
TM3000 WinSx w/60MB hard disk drive	$2,429.00
TM3000 WinSx w/80MB hard disk drive	$2,729.00
TM3000 WinSx w/120MB hard disk drive	$3,099.00

- 5.7 Pound 386-20SX Notebook
- 10" VGA Display 640 X 480
- 4MB RAM Expandable to 6MB
- MS-DOS 5.0,Winodws 3.0,TravelPoint Device.

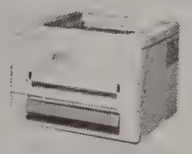
TI TM2000 Notebook



- 80286-12Mhz w/1MB RAM
- 10" VGA 640 X 480
- 20MB or 40MB Hard Disk
- DOS 4.1, Laptop Manager,
- Laplink and cable

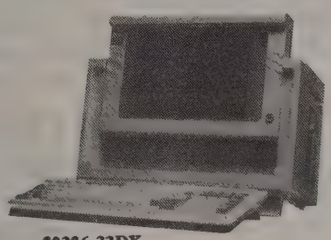
$979/20MB **$1279**/40MB

TI MicroLaser



- PS17 9PPM $1209
- PS35 9PPM $1475
- PS35 Turbo 9PPM $1899
- PS17XL 16PPM .. $2499
- PS35XL 16PPM .. $2799
- PS35XL Turbo ... $3289
- AppleTalk for Mac $99

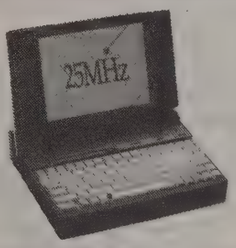
LCD / GAS PLASMA VGA PORTABLE



- 80386-33DX
- 1MB Exp. to 32MB
- 2 or 3 expansion Slot
- 1.2MB w/FHDC (1.44MB optional)
- VGA 640 X 480 16 Gray Sacle
- 2 Serial 1 Parallel
- 120MB Hard Disk
- One yearWarranty Parts & Labor

$1695 / $ 1895

386-25SXL Notebook



- 80386-25SXL 2MB Exp. to 8MB
- 60MB/80MB/120MB Hard disk
- Stand-by Mode(includes CPU,I/O and
- Peripheral automatic power down)
- 1.44mb Micro Floppy Drive
- 1 Serial, 1Parallel, VGA Ext. Port
- Ext, 101Keyboard Port, Mouse port
- One SCSI Port
- One year Warranty Parts & Labor

$1999 / $2199 / $ 2495

386/486-33DX Notebook

- 80386/80486-33DX w/32K Cache
- 4MB Exp. to 16MB
- Super Twist VGA LCD, 32 Gray Sacle
- 1.44mb Micro Floppy Drive
- 2 Serial, 1Parallel, VGA Ext. Port
- Ext. 101Keyboard Port,
- AT-Bus I/O for Docking Station
- 120MB Hard Disk (16ms)
- One year Warranty Parts & Labor

$2695 / $3195

CRT Color Portable

- 80386-33DX w/64K Cache
- 4MB Exp. to 32MB
- Super VGA CRT 0.28mm dot pitch
- 1.2mb Floppy Drive(1.44mh optional)
- 2 Serial, 1Parallel
- 101 Enhanced Keyboard
- 3 Expansion Slot
- 120MB Hard Disk (16ms)
- One yearWarranty Parts & Labor

$ 2699 / $ 2999

McTEK 386-16/386-25SX

- 80386-16SX / 25SX
- 1MB Exp. to 32MB
- 8 Expansion Slot
- 1.2MB Floppy Drive
- 2 Serial, 1Parallel
- 101 Enhenced Keyboard
- 40MB Hard Disk (25ms)
- Option : VGA card and monitor
- One year Warranty Parts & Labor

$659 / $759

McTEK 386-25DX

- 80386-25DX / 25DX w/64K Cache
- 1MB Exp. to 32MB
- 8 Expansion Slot
- 1.2MB Floppy Drive
- 2 Serial, 1Parallel
- 101 Enhenced Keyboard
- 40MB Hard Disk (25ms)
- Option : VGA card and monitor
- One year Warranty Parts & Labor

$839 / $909

McTEK 386-33/486-50DX

- 80386-33DX/ 486-50DX w/64K Cache
- 4MB Exp. to 32MB
- 8 Expansion Slot
- 1.2MB Floppy Drive
- 2 Serial, 1Parallel
- 101 Enhanced Keyboard
- 120MB Hard Disk (17ms)
- Option : VGA card and monitor
- One year Warranty Parts & Labor

$1119 / $1859

McTEK 486-33 ISA/EISA

- 80486-33DX w/64K Cache
- 4MB Exp. to 32MB
- 8 Expansion Slot
- 1.2MB Floppy Drive
- 2 Serial, 1Parallel
- 101 Enhanced Keyboard
- Option : VGA card and monitor
- One year Warranty Parts & Labor

$1509 / $1999

Monitors / Video Card

Trident VGA w/512K	$69
Paradise VGA w/1MB (OEM)	$109
Tseng Lab VGA w/1MB	$119
Tseng Lab VGA 32,768 color	$155
Fahrenheit 1280 w/1mb VRAM	$295
ATI VGA wonder XL w/1mb	$245
ATI Ultra 8514+ w/1mb	$459
Hercules Graphic Station(1MB)	$549
Diamond Stealth w/imb	$289
SVGA Monitor .28mm	$289
SVGA Monitor non-interlaced.	$365
NEC 3FGX	$699
NEC 4FG	$799
NEC 5FG	$1450
IDEK MF5217	$975
SONY 1604	$1100
Mitsubishi 20" 1280 X 1024	$1899

Printer

HP IIP+	$799
HP IIIP	$999
HP III	$1475
HP Desk Jet Plus 500	$495
HP Scanner Color	$1550
Citizen GSX140 Plus	$299
Citizen GSX 130	$255
Citizen PN48	$345
Citzen 200GX (9 Pin)	$169
Canon BJ-10ex	$345
Okidata OL400	$685
Panasonic KXP1124i	$299
Panasonic KXP1123	$225
Panasonic 4410 5ppm	$739
NEC Model 95 (PS Level II)	$1459
QMS410	$1625
IBM Laser Printer Model 10	$1699

Misc. & Tape Drvie

LogitecH Mouseman	$75
Logitech Trackman	$89
Microsoft Mouse	$95
Scanman Plus/256 w/OCR	$399
ScanPlus 300 Gray Scale	$499
ScanPlus 3000 Color	$699
Colorado 120mb tape backup	$225
Colorado 250mb tape backup	$285
Modem 2400 Baud Int.	$75
Modem/fax 2400/9600	$155
Everex 3MB expansion Card	$109
Norton Anti Virus	$95
WP 5.1 Windows uograde	$99
Wordperfect 5.1	$239
Wordperfect 5.1 Tradeup	$99
Laplink Pro	$129
Microsoft Windows 3.1	$95

Hard Disk Drive

20MB/40mb MFM	$175/245
50MB Quantum (17MS)	$275
80MB Conner	$345
80MB Maxtor	$325
80MB Seagate 4097 (MFM)	$495
80MB Microscience (MFM)	$345
50MB Quantum for Mac(int.)	$269
105MB Quantum for Mac(int)	$365
120MB Conner (IDE)	$365
120MB Maxtor (IDE)	$355
120MB Maxtor for Mac int.	$389
200MB Conner (IDE)	$659
200MB Maxtor (IDE)	$649
240MB Quantum	$659
330MB Maxtor (IDE)	$959
330MB Maxtor (SCSI)	$1059
600MB Maxtor	$1559

Monthly special

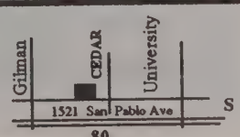
- Sony 1304 Multiscan .. $555
- 50MB Ext. for Mac ... $299
- 120MB Ext. for Mac .. $459
- SVGA w/SVGA Card . $339
- Sony CD ROM 541 ... $499
- Sony 1604 Multiscan . .$1049
- HP III $1475
- Scan Plus 3000 Color . .$659
- NEC Laser Printer 95 .$1459

McTek Systems, Inc.
1521 San Pablo Ave. Berkeley, Ca 94702
Tel : (510) 525-5129

AUTHORIZED
NOVELL, ALDUS,
TI,HERCULES,ORCHID

VISA / MASTER ACCEPTED

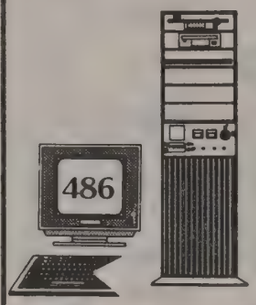
ALL PRICES SUBJECT TO CHANGE



MICRO MARKETPLACE

SCHWAB COMPUTER CENTER

SC486DX-33 CAD/CAM WORKSTATION



- 4 MB RAM, 64K CACHE
- 1.2 MB TEAC FLOPPY
- 212 MB IDE HARD DISK
- 14" SVGA MONITOR 1024 0.28 mm
- 1 MB VGA ADAPTER
- DESKTOP AT CASE
- 101 ENHANCED KEYBOARD
- 2 SERIAL, 1 PARALLEL, 1 GAME
- MICROSOFT COMPATIBLE MOUSE

$1995

VIDEO COMBO

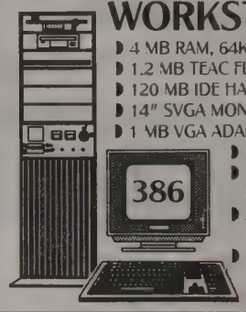
- 17" Samsung 1024 III Monitor
- Orchid Pro Designer IIs w/1 MB

$995

DIGITIZER

- Calcomp
- 12x12
- 4 Button Cursor **$299**

SC386-33 BUSINESS WORKSTATION



- 4 MB RAM, 64K CACHE
- 1.2 MB TEAC FLOPPY
- 120 MB IDE HARD DISK
- 14" SVGA MONITOR 1024 0.28 mm
- 1 MB VGA ADAPTER
- DESKTOP AT CASE
- 101 ENHANCED KEYBOARD
- 2 SERIAL, 1 PARALLEL, 1 GAME
- MICROSOFT COMPATIBLE MOUSE

$1495

TOTAL BUSINESS SOLUTIONS: MICROSOFT OFFICE FOR WINDOWS

- Word For Windows
- Excel 3.0 Spreadsheet
- Powerpoint Presentation
- Electronic Mail

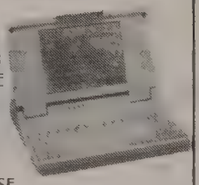
$475

VIDEO COMBO

- 1024 14" Monitor 0.28 mm
- Super VGA Card **$350**

ONE YEAR PARTS AND LABOR WARRANTY ON ALL SYSTEMS

NOTEBOOK BEST PRICE 386SX/20 NOTEBOOK MODEL



- 2 MB RAM UP TO 6 MB
- 1.44 MB FLOPPY DRIVE
- 40 MB IDE HARD DISK
- VGA SCREEN
- SERIAL & PARALLEL PORTS
- DELUXE CARRYING CASE
- MICROSOFT DOS 5.0

$1595

BEST SELLING SC386SX-25

- 1 MB RAM
- 1.2 MB TEAC FLOPPY
- 85 MB IDE HARD DISK
- 14" VGA COLOR MONITOR
- 16 BIT VGA ADAPTER
- DESKTOP AT CASE
- 101 ENHANCED KEYBOARD
- 2 SERIAL, 1 PARALLEL, 1 GAME
- MICROSOFT COMPATIBLE MOUSE

$995

BEST DEAL SC286-12

- 1 MB RAM
- 1.2 MB TEAC FLOPPY
- 42 MB IDE HARD DISK
- MONOCHROME MONITOR
- MONOGRAPHIC ADAPTER
- DESKTOP AT CASE
- 101 ENHANCED KEYBOARD
- 2 SERIAL, 1 PARALLEL, 1 GAME
- MICROSOFT COMPATIBLE MOUSE

$595

LAN SOLUTIONS

- LAN tastic 2Mbit STARTER KIT $375
- LANtastic ETHERNET STARTER KIT ..495
- NOVELL LITE ETHERNET STARTER KIT 335
- LANtastic 2Mbit ADAPTER.....165
- LANtastic ETHERNET ADAPTER.....215

CD ROM SPECIAL

SONY EXTERNAL CD DRIVE WITH 5 TITLES

$390

AT MOTHERBOARDS

486/33MHz, 64K	$695
386/33MHz, 64K	375
386/25MHz, 64K	350
386/25MHz	295
386SX/25MHz	195
386SX/16MHz	175
286/12MHz	85

HARD & FLOPPY DRIVES

Quantum 40 MB	$180
Seagate ST1124A 124 MB.	369
Conner 200 MB IDE	650
Maxtor 380MB ESDI	1195
Maxtor 130 MB.	395
Maxtor 200 MB.	650
Teac 1.2MB	65
Teac/Sony 1.44MB	65

CONTROLLER CARDS

DTC 1:1 RLL 727AT	$119
DTC 1:1 ESDI 6280	152
Ultrastor ESDI 32K	179
Western Digital Chipset 1:1 MFM	73
Everex 1:1 MFM	95
Colorado Int Tape BackUp Controller	84

- One Year Warranty On Parts & Labor
- Prices Subject To Change w/o Notice
- Prices Based On Cash Price and With System Purchase

VGA & EGA CARDS

Trident 1M 1024	$85
MGA w/PARA	25
OAK VGA	55
Diamond Speed Star 512K.	185
Orchid ProDesigner IIs 512K	CALL
Orchid Fahrenheit 1280	CALL

MONITORS

Samsung Mono Amber 12"	$75
Viewsonic 4 Super VGA 14" 1024	365
Viewsonic 5 Trinitron Non-Int 1024	555
NEC 2A 800x600	435
NEC 3D 1024x768	635
NEC 4FE.	815
Samsung Super VGA 1024	355
Samsung 640x480 VGA	275
Samsung 17" VGA	899
Sony 1304 HG Non-Int	595
Seiko CM-1450 Non-Int	585
Idek MF5217 17" VGA 0.28mm	1095
Taxan MV875 17" VGA 0.26 mm.	1275
Nanao 9080I 16" VGA 0.28 mm	1095
Toshiba 17CMOL 17" VGA	1395
Hitachi CM2085 20" VGA	1875

NETWORK CARDS

Everex Ethernet 8 Bit	$169
Everex Ethernet 16 Bit	265
Ethernet 8 Bit	125
Novell 8 Bit NE 1000.	155

TAPE BACK-UP

Colorado 120MB.	219
Colorado Ext Contr Kit	125
Colorado 250MB.	299
Colorado 700MB.	875

MEMORY & MULTIFUNCTION CARDS

Everex RAM 3000.	$90
Everex RAM 8000	269
Everex RAM 10000	149

POWER SUPPLIES

150W XT.	$45
220W AT	60
220W AT UL.	69

MODEMS

Int 2400	$59
Ext 2400	95
Int 2400 Fax	69
Int. 2400/9600 Send/Receive	85

ADD-ON CARDS

AT I/O 2S/P/G	$35
Serial Card	18
Printer Card	18
Game Card.	19
Everex Magic I/O	59

CASES

Baby AT 220 W	$95
Tower AT 220 W	135
Full Size AT 220 W/Digital	110
Middle Size AT 220W.	155

KEYBOARDS

Lite-On 101 Key.	$39
Maxiswitch 101 Key	49
Click 101 Key	49

PRINTERS

Panasonic 1180	$165
Panasonic 1124	265
Panasonic 1624	365
HP LaserJet III	1599

MOUSE

Logitech Trackman	$83
Logitech Bus/Serial	75
Microsoft Ser/Bus	89
Microsoft Compatible.	35
Microsoft Mouse w/Windows 3.0	149

MATH CO-PROCESSORS

CYRIX MATH CO-PROCESSORS

83D87-33	$195
83D87-25	185
83S87-16SX.	150

INTEL MATH CO-PROCESSORS

80287/10MHz	$115
80387-SX16	160
80387-25/33	235/245

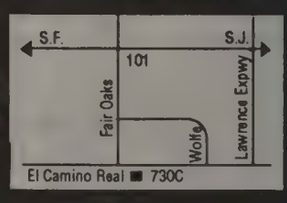
SCHWAB COMPUTER

Best Service! Best Price!

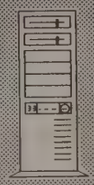
730C E. El Camino Real
Sunnyvale, CA 94087

(408) 245-6666
Fax (408) 245-3103

Hours: M-F 9:00-6:00pm
Sat 11:00-4:00pm



Sales Repair Services



We don't just sell, we also service.

Computers Printers Networks

MONTHLY SPECIALS

Comet Micro ISA 486
33MHz with 256K Cache

Full Size Tower 250W Power Supply w/ Digital Display
486DX 33MHz 256K Cache (US Made, FCC Class B)
4MB 70ns RAM, Expandable to 64MB
IDE 2 Hard/2 Floppy Drives Controller
Teac 1.2M and 1.44M Floppy Drives
Maxtor LXT213A 213MB Hard Disk 15ms
2 Serial/1 Parallel/1 Game Ports
Orchid Prodesigner IIs with 1MB & Sierra DAC
Sony 1304S Super VGA Monitor .25mm
Keytronic or Maxiswitch Enhanced Keyboard

$2,525.00

Comet Micro ISA 386
33MHz with 128K Cache

Mid Tower with 230W Power Supply w/ Digital Display
386DX 33MHz with 128K Cache
2MB 70NS RAM, Expandable to 32MB
IDE 2 Hard/2 Floppy Drives Controller
Teac 1.2M or 1.44M Floppy Drive
Maxtor LXT7120A 130MB IDE 15ms Hard Disk
2 Serial/1 Parallel/1 Game Ports
Trident SVGA Adapter with 1MB RAM
ViewSonic 6 14" .28mm Non-Interlace Monitor
Keytronic or Maxiswitch Enhanced Keyboard

$1,425.00

Comet Micro 386SX 25MHz

Desktop Case with 200W Power Supply
386SX 25MHz with 1MB 70ns RAM
IDE 2 Hard/2 Floppy Drives Controller
Teac 1.2M or 1.44M Floppy Drives
Conner CP3000 40MB IDE Hard Disk
2 Serial/1 Parallel/1 Game Ports
16bit SVGA Adapter with 256K RAM
ViewSonic 4E .28mm SVGA Monitor
Keytronic or Maxiswitch Enhanced Keyboard

$950.00

Please come and see the demo today.

Panasonic Office Automation OA

Panasonic Authorized Service Center
Laser, Dot Matrix & Computers

NOVELL.

System Boards:

All system board come with CPU and 0 RAM	Unit Price
Orchid SuperBoard 486 33MHz 256K Cache	$999.00
N.I.C.E. US Made 486 50MHz 256K Cache	1,050.00
N.I.C.E. US Made 486 33MHz 256K Cache	750.00
Comet 486 33MHz 64K Ram Cache	640.00
Mylex 386 33MHz 64K Ram Cache	600.00
Comet 386 40MHz 128K Ram Cache	350.00
Comet 386 40MHz 64K Ram Cache	325.00
Comet 386 33MHz 64K Ram Cache	305.00
Comet 386SX 25MHz	195.00
DTK Grafika Systems	CALL

Hard Drives:

Conner CP3204 210MB IDE 16ms	$575.00
Conner CP30104 120MB IDE 19ms	360.00
Conner CP3000 40MB IDE 25ms	220.00
Maxtor 1.02GB Panther Drives SCSI 13ms	1,850.00
Maxtor XT8760E/S 675MB ESDI or SCSI 16ms	1,295.00
Maxtor LXT340A/S 340MB IDE or SCSI 13ms	945.00
Maxtor LXT213A/S 210MB IDE or SCSI 15ms	595.00
Maxtor LXT7120A 130MB IDE 15ms	360.00
Fujitsu Hard Drives: 5 Years Warranty	
Fujitsu M2622 330MB IDE/SCSI 3.5" 11ms	1,075.00
Fujitsu M2623 425MB IDE/SCSI 3.5" 11ms	1,175.00
Fujitsu M2624 520MB IDE/SCSI 3.5" 11ms	1,250.00
Fujitsu M2261 415MB SCSI/ESDI 16ms	1,250.00
Fujitsu M2263 660MB SCSI/ESDI 16ms	1,295.00
Quantum LPS120AT 122MB IDE 15ms	365.00
Quantum LPS240AT 244MB IDE 15ms	650.00

Monitors:

Hitachi CM2085+ 20" .31 1280 X 1024 SVGA	$1,700.00
Hitachi CM2187M 21" .31 1600 X 1280 SVGA	2,500.00
NEC 5/6FG 17/21" SVGA Monitor	3050/1450
NEC 4FG 15" 72Hz SVGA Monitor	785.00
NEC 3FGX 15" .28mm SVGA Montior	675.00
Nanao N9500 20" .31mm 1280 X 1024 SVGA	1,750.00
Nanao T560i 17" .26mm SVGA Monitor	1,895.00
Nanao F550i 17" Flat Screen .28mm SVGA	1,200.00
Nanao N9080i 16" .28mm 1280 X 1024 SVGA	1,030.00
Seiko CM1760 17" 1280 X 1024 SVGA	1,300.00
Sony 1604S .25mm 17" SVGA Monitor	1,050.00
Sony 1304S .25mm 14" SVGA Monitor	575.00
Toshiba P21CM00 21" .31mm 1280 X 1024	2,100.00
ViewSonic 8 20" Super VGA Monitor	1,700.00
ViewSonic 7 17" 1280 X 1024 SVGA Monitor	1,150.00
ViewSonic 6 14" .28mm NI 1024 X 768	360.00
ViewSonic 5E 72Hz .28mm 1024 X 768 SVGA	440.00
ViewSonic 4 SVGA .28mm 1024 X 768	315.00
ViewSonic 1 14" VGA Monitor 640 X 480	245.00
14" Amber Monochrome Monitor	105.00
14" VGA Paper White Monochrome	125.00

Power Supplies:

150W XT Size Power Supply	$49.00
200W XT Size Power Supply	59.00
200W Square Size Power Supply	59.00
230W AT Size Power Supply	59.00
230W AT Size Power Supply for Tower Case	69.00
300W AT Size Power Supply for Tower Case	99.00

Video Adapters:

	Unit Price
ATI Wonder HiColor XL 1MB & 400 dpi Mouse	$215.00
ATI Graphic Vantage 1MB & 400 dpi Mouse	360.00
ATI Graphic Ultra 1MB VRAM & 400 dpi Mouse	525.00
Diamond SpeedStar Plus with 1MB & HiColor	185.00
Diamond Stealth 1MB VRAM & HiColor	280.00
Orchid Fahrenheit 1280 1MB VRAM & HiColor	280.00
Orchid Prodesigner IIs 1MB & HiColor	185.00
Paradise OEM SVGA with 256K/512KB	70/85
Trident 8900 Chip Set 1MB SVGA Adapter	85.00
Mono Graphic Adapter	18.00
Oak 16Bit VGA Adapter 800 X 600	45.00
Opta Monalisa 24bit Adapter	CALL
#9GXi Lever 22 to 25	CALL
Metheus Graphic Adapters	CALL
Hercules Superstaion 3D	CALL
The Matrox MG-3D Ultra	CALL

Add-On Cards:

2 Serial, 1 Parallel, 1 Game Ports Card	$18.00
IDE 2 Hard/2 Floppy Drives Adapter	18.00
IDE 2 Hard/2 Floppy Adapter with I/O Ports	32.00
Ultrastor 12/F ESDI 32K Cache Controller	164.00
Adaptec 1522/1542 SCSI Host Adapter Kit	180/275
DTC 6280 ESDI Cache Controller	145.00
DTC 3280 16 Bit SCSI Controller	145.00
Promise SCSI/IDE Cache Controller	CALL
SCSI or ESDI Controller for EISA Bus	CALL

Input Devices:

Keytronic 101 Keys Plus Keyboard	$44.00
MaxiSwitch 101 Key Keyboard	44.00
Northgate Ultra Enhanced Keyboard	95.00
Northgate 102 Keys Enhanced Keyboard	75.00
Northgate 101 Keys Enhanced Keyboard	70.00
Logitech Dexxa 3 Button Mouse with Paint	29.00
Microsoft 400 dpi Serial/Bus Mouse	85.00
Logitech 400 dpi Serial/Bus Mouse Man	67/70
SummaSketch II 12 X 12 with 4 Button & Stylus	315.00

Printers:

Panasonic KXP4450i 11ppm Laser Printer	$1,099.00
Panasonic KXP4410 5ppm Laser Printer	699.00
HP LaserJet III 8 ppm	1,495.00
HP Laser Jet II Plus 4ppm	815.00
Ram Upgrade Board w/1MB for KXP4450i/4420	105.00
Ram Upgrade Board w/1MB for HPLJ II/III/P	95.00
Ram Upgrade Board for Panasonic KXP4410	CALL

Miscellaneous:

US Robotics External V.32 9600B Modem	$399.00
9600/2400 FaxModem for Windows	129.00
9600/2400 Send & Receive Fax/Modem	95.00
Internal 2400B Modem with MNP 5 Software	59.00
Colorado 120/250MB Internal Tape Backup	230/280
Mid/Full Tower with 230/250W Power Supply	115/145
Desktop/Mini Tower with 200W Power Supply	90.00
Sound Blaster Pro 16bit with MIDI Kit	215.00

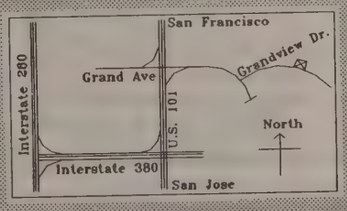
Floppy Drives:

Teac 5.25" 1.2MB Floppy Drive	$62.00
Teac 3.5" 1.44MB Micro Floppy Drive	62.00
Teac 5.25" 360K Floppy Drive	60.00

Comet Micro System

1301 Grandview Drive
South San Francisco, CA 94080
Phone: (415) 615-9123, Fax: (415) 615-0287
MON - FRI 9am to 7pm, SAT 10am to 5pm

VISA MasterCard



TERMS & CONDITIONS

Prices subject to change w/o notice
Not responsible for typos errors
Prices based on cash prices
Please call for items not listed
One year warranty on parts
Three years warranty on labor
Dealer & Quantity Pricing Available

MICRO MARKETPLACE

One year warranty/parts & labor

I-TECH 386 and 486 Fully Compatible with WINDOWS 3.0, MS-DOS, AUTOCAD, OS/2, Novell, Banyan, UNIX, SCO and other software.
- Prices & availability subject to change w/o notice
- Prices based on cash prices
- We accept VISA & Mastercars
- Government P.O. accepted
- Not responsible for typos
- Company Terms on credit approval

NANAO 9080I+ FAHRENHIET 1	$ 1245
SONY 1604 + ORCHID IIs + HC Ramdac	$ 1165
SONY 1304 + ORCHID IIs + HC Ramdac	$ 710
NEC 3FGX 15" + Orchid IIs + HC Ramdac	$ 825
IMPRESSION or POWER II 512K Paradise	$ 333
VIEWSONIC 6 nonint.+ Pixel or +Ramdac	$ 460
CONNER 30104 - 120MEG / 16ms	$ 315
MAXTOR 7120A - 120MEG / 16ms	$ 365
MB 386-33 / 64 C + CPU	$ 270
MB 386-40/ 64 C + CPU	$ 290
MB 486-33 / 64 C + CPU	$ 670
MB 486-33 / 256 C + CPU + 4MEG	$ 780
ORCHID PRO DESIGN IIs + HC Ramdac	$ 168
DIAMOND SPEED STAR	$ 155
PIXEL ENGINEER / 32000 COLORS	$ 145
ART DESIGN IV / 32000 COLORS	$ 135
TRIDENT 1MEG	$ 78

WORLD LOWEST PRICES

I-TECH
INTERNATIONAL TECHNOLOGY

386DX / 486DX Intel CPU BASIC SYSTEMS INCLUDED:

- OPTI write back cache 64C exp. up to 256cache exp. up to 32M on board
- Zero wait state
- New AMI Bios
- 1:1 IDE 2HD/2FD Controller
- 101 KB, Teac 1.2mb or 1.44mb FDD
- Enhanced case or Mini Tower case
- 2serial/1parallel/1game,
- Motherboard w/CPU and 1MB basic memory installed
- 8 EXPANSION SLOTS
- MATH COPROCESSOR SOCKET
- CLOCK/CALENDAR w/BATTERY BACKUP

SPECIAL SYSTEMS

INCLUDED BASIC SYSTEM
PLUS
1.2 & 1.4 + MOUSE + 4MB
+ 120 - 130HD (CONNER/MAXTOR/SEAGATE)
+ SVGA WEN / IMPRESSION
INTERLACE (1024X768), .28P.
+ 16 BIT (512K) PARADISE

386DX / 486DX Intel CPU BASIC SYSTEMS INCLUDED:	SPECIAL SYSTEMS
386- 33 / 64K Cache $ 422	*386- 33 / 64K Cache Special System* $ 1285
386- 40 / 64K Cache $ 435	*386- 40 / 64K Cache Special System* $ 1305
486- 33 64K Cache $ 735 / *486- 50 64K Cache* $ 1075	*486- 33 64K Cache* $1562 / *486- 50 64K Cache* $2000

HARD / FLOPPY DRIVE ADAPTERS

IDE 2FD/2HD	$ 14
IDE 4FD/2HD	36
IDE 2FD/2HD with 2s/1p/1g	25
MFM 2FD/2HD	48
Ultrastor ESDI w/32K Cache (ISA)	168
Adapted SCSI 1542KB w/Kit (ISA)	274
Ultrastor SCSI 24F / 24C (EISA)	498 / 698
Ultrastor ESDI 22F / 22C (EISA)	498 / 698

PRINTERS

Panasonic KX-P1180	154
Panasonic KX-P1123	198
Panasonic KX-P1124	284
Panasonic KX-P1624	358
Cable for Printer	5

MISCELLANEOUS

AT I/O (2s/1p/1g)	$ 12
Serial CArd/Printer Card/Game Card	12
Windows 3.0 + Super Mouse II (400dpi)	68
Internal Modem 2400 Baud	44
Fax Modem (9600 Fax,2400 Modem)	84
3-Button Mouse	15
Logitech Mouseman Serial (400 dpi)	66
Logitech Mouseman Bus (400dpi)	73
Colorado Tape Backup DJ-10/20	208 / 278
Baby AT/Mini Tower Case w/200W PS	59
Medium Tower Case w/200W PS	99
Full Tower Case w/230W PS	139

VIDEO CARDS AND MONITORS

Monographic Card w/Print Port (MGP)	$ 11
Oak VGA-256K (800•600, 16-Bit)	38
Oak VGA-512K (1024•768, 16-Bit)	48
Trident 1MB (1024•768•256)	78
Ahead VGA Wizard Deluxe w/1MB (70Hz)	138
Video 7102i w/512KB	166
Video 7VRAM II w/1MB	338
Diamond Steelth	260
Diamond Speed Star w/Hi-Color	155
Orchid IIs/Fahrenheit 1280 w/1MB	240
Orchid Prodesigner IIs w/Hi-Color	165
Orchid IIs w/1MB with Sony 1034HG	708
Nanao 9070U (16", 1024•768, 0.28)	884
Nanao 9080i (16", 1280•1024, 0.28)	1,028
NEC 3FGX (15", 1024•768, 0.28)	675
NEC 4FG (15", 1024•768, 0.28)	798
NED 4DS (16", 1024•768, 0.28)	978
NEC 5D (20", 1280•1024, 0.31)	1,848
Sony CPD 1304(14", 1024•768, 0.25)	548
Sony CPD 1604 (17", 1024•768, 0.25)	975
Standard VGA (640•480) Monitor 0.51	198
Super VGA (1024•768) Monitor 0.39	234
Super VGA (1024•768) Monitor 0.28	278
Super VGA (1024•768, 0.28) Non-int 14"SVGA (1024•768, 0.39) Monitor with 16-Bit SVGA 512K Card	333 / 278
14" VGA Monitor w/16-Bit VGA Card	238
12" Mono Monitor w/MGP Card	88
14" Mono Monitor w/MGP Card	108

NEW HARD DRIVES

40mb/28ms (IDE)	$ 200
60mb/18ms (IDE)	260
80mb/18ms (IDE) Maxtor	310
100mb/18ms (IDE)	330
120mb/16ms (IDE) Connor	370
130mb/15ms (IDE) Maxtor	380
200mb/16ms (IDE)	625
200mb/16ms (SCSI)	655
240mb/15ms (IDE) Quantum	655
340mb/15ms (SCSI or IDE) Maxtor	910
676mb/16ms (SCSI or IDE)	1,300

RAM &MATH COPROCESS.

4 MB - 70 Simm	145
4 MB - 80 Simm	135
1 MB - 60	40
1MB - 70	39
1 MB - 80	38
256K 80 Simm	10
387SX-20	120
387DX-33/25/20/16	145

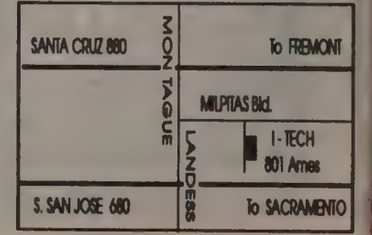
KEYBOARDS

101 Enhanced Keyboard	$ 24
Maxiswitch	34
Keytronics	39
Focus 2001 / 3001 / 5001	44 / 64 / 74
Omnikey 102 / Ultra	84 / 114

I - T E C H
INTERNATIONAL TECHNOLOGY

801 AMES Ave.
MILPITAS • CA 95035
TEL. (408) 956 - 8261 •
FAX. (408) 956 - 8264
BUS. HRS: M - F 9:30 - 6:00
SAT & SUN 11:30 - 4:00

COME TO VISIT OUR NEW LOCATION



ATEL™

THE NAME PEOPLE TRUST

intel inside™

MONTHLY SALE!

ATEL MIS 486-33i
HIGH PERFORMANCE SYSTEM

- Intel 80486DX-33 MHz CPU
- Built-In Math Co-Processor
- **4 MB** 70ns RAM Expandable to 32 MB On-Board
- 64K Cache Expandable to 256K
- 1.2 MB **AND** 1.44 Floppy Drives
- Maxtor 130 MB 15ms IDE Hard Disk
- IDE Controller
- 2 Serial, 1 Parallel & 1 Game Ports
- 14" SVGA 1024 x 768 .28mm Dot Pitch High Resolution Color Monitor
- **1 MB** 16-Bit SVGA 1024 x 768 Card
- Clock/Calendar with Battery Back-Up
- 8 Expansion Slots
- Fujitsu 101-Key Enhanced Keyboard
- Mid-Tower Case with Power Supply
- MS-DOS 5.0

$1792
COMPLETE SYSTEM

486-50i ISA $2295
486-33e EISA $2492

OPTIONS:
- Non-Interlaced SVGA Monitor .**add $60**
- Windows 3.0 with Mouse . . . . .**add $69**
- Diamond SpeedStar . . . . . .**add $90**
- ViewSonic 6. . . . . .**add $135**

ATEL MIS 386-33i
COMPLETE SYSTEM $1295

- 386DX-33 MHz CPU
- Math Co-Processor Socket
- **2 MB RAM** Expandable to 32 MB
- 64K Cache Expandable to 256K
- 1.2 MB or 1.44 MB Floppy Disk
- NEC 105 MB IDE Hard Disk
- IDE Controller
- 2 Serial/1 Parallel/1 Game Ports
- 14" SVGA 1024 x 768 .28mm High Resolution Color Monitor
- 512K 16-Bit SVGA 1024 x 768 Card
- Clock/Calendar with Battery Back-Up
- Fujitsu 101-Key Enhanced keyboard
- Desktop or Mini-Tower Case
- MS-DOS 5.0

386-40i $1325
486SX-20 $1392

ATEL MIS 386SX-20
BASIC SYSTEM + HARD DISK
$642

- 386SX-20 MHz CPU
- 1 MB RAM Expandable to 8 MB
- 1.2 MB or 1.44 MB Floppy Disk
- 40 MB IDE Hard Disk
- IDE Controller
- 2 Serial/1 Parallel/1 Game Ports
- Clock/Calendar with Battery Back-Up
- Desktop or Mini-Tower Case
- MS-DOS 5.0

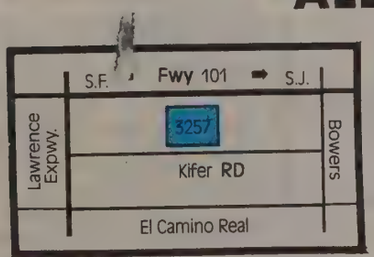
386SX-16 $612
386SX-25 $692

OPTIONS:
- 14" SVGA Color Monitor with 16-Bit Card . . . .**add $274**
- 14" SVGA .28 mm Color Monitor with 1 MB Card.**add $385**

30 DAY MONEY BACK GUARANTEE

1 YEAR PARTS 2 YEAR LABOR WARRANTY

ALL SYSTEMS MADE IN U.S.A.



(408) 733-2000
(800) 788-8188 Outside Cal.
Fax: (408) 733-2012
GOV'T, UNIVERSITY & CORPORATE PO'S WELCOME
No Surcharge On Visa & Master Card
Prices & Specifications Subject To Change w/o Notice

ATEL
ATEL COMPUTER CORP.
Member Of
American Electronics Association
3257 Kifer Rd. • Santa Clara, CA 95051

OFFICE HOURS:
Mon-Fri 9AM - 6PM Sat. 10AM-4PM

MasterCard VISA

PanPacific Computer Corporation
165 San Gabriel Drive,
Sunnyvale, CA 94086
Tel: 408-720-1315
Fax: 408-720-1102

PanPacific Computer Corporation
165 San Gabriel Drive
Sunnyvale, CA 94086
Tel: 408-720-1315
Fax: 408-720-1102

VGA CARDS

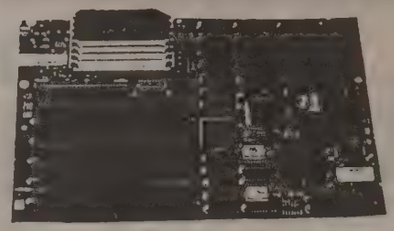
Orchid Farenheit-1280/1M $289
Orchid ProDesigner IIs/1M ...$189
TsengLab ET4000/1M $99
Paradise SVGA/1M $93
Trident SVGA/1M $79
OAK SVGA/1M $75

SOUND BLASTER *PRO*

$189

- Stereo DAC with hardware ADPCM
- 22-voice FM misic Synthesizers
- MIDI Interface
- Built-in CD-ROM Interface
- Text-to-Speech Driver SBTALKER
- FM Intelligent ORGAN

MOTHERBOARDS



ORIGINAL MOTHERBOARD MANUFACTURER

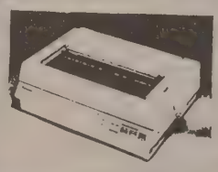
PAN486U-50

MADE IN USA

LANDMARK V2.0 .....167.3 Mhz
PowerMeter V1.5 ..... 22.15 MIPS

PAN486U-50/256K CACHE $980
486-50/64K CACHE.....$900
486-33/64K CACHE.....$575
386-40/64K CACHE $270
386-33/64K CACHE $260
386SX-25 .....$155
386SX-20 .....$140
386SX-16 .....$130
286-16 .....$75

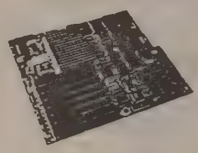
Dot-Matrix Printers



Panasonic Printers

KX-P1180, 9pin, 80C $154
KX-P1123, 24pin, 80C ... $198
KX-1624, 24Pin, 132C ... $358
KX-1695, 9pin, 132C $441

EISA 486-33/64K



$1059

- Intel 80486-33 CPU
- 64K External Cache
- Intel 82350 EISA Chipset
- 64MB on-board memory capacity
- 8 32-bit EISA slots
- on-board IDE HD/FD, parallel, serial port

SIMM MEMORY

256KX9 - 70 ns $11
1M X9 - 70 ns $36
4M X9 - 70 ns $140

COLOR PRINTERS

Color Optional

CITIZEN
200GX, 9Pin, 80C $160
GSX130,24Pin, 80C $258
GSX140, 24Pin, 80C $308
GSX145, 24Pin, 132C ..$419
PANASONIC
KX-P2180, 9Pin, 80C ...$199

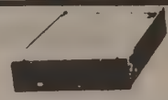
LASER PRINTER

Panasonic KX-P4410
512K, 5PPM $699
Panasonic KX-P4420
512K, 8 PPM.....$1253

SVGA MONITORS

MGC 1402, 14", .28MM, INTERLACED 1024X768 ..... $290
NORTHMAN 1433, 14", INTERLACED 1024X768 ..... $285
NORTHMAN 1436, 14", NON-INTERLACED 1024X768 $340
SONY 1304HG, 14" .25MM, NON-INTERLACED $595
IDEK MF-5217, 17", .28MM , NON-INTERLACED $1050
SONY 1604, 17", .25MM, NON-INTERLACED $1090

FLOPPY DRIVES



TEAC 1.2M 5.25" FDD .. $60
TEAC 1.44M 3.5" FDD ... $55
TEAC 2.88M 3.5" FDD $120
Mitsumi 1.2M 5.25" FDD .. $55
Mitsumi 1.44M 3.5" FDD .. $52

BARGAIN CORNER

- Z-NIX Mouse II w/Windows ..$50
-Z-NIX Cordless Mouse $50
- MS Ballpoint Serial $99
- Logictech Scanman Plus ... $89
-Genus GT-1212B Digitizer ... $199
-Kurta 12x17 Digitizer $499
-Roland DXY-1200 Plotter $999
-Roland DXY-1300 Plotter $1199
-Roland CAMM 1 Signmaker..$2999
-Roland DSP-10 plotter Stand..$200

MISC.

Hard Drives
CONNER 120M $360
CONNER 210M $620
QUANTUM 120M $360
QUANTUM 170M $450
QUANTUM 240M $650
MAXTOR 120M $360
MAXTOR 200M $625

KEYBOARDS
POCUS 5001 .....$69
KEYTRONICS 101 .....$45
MITSUMI 101 KEY.....$35
LITE-ON 101KEY $25

CASE
Mini-Tower/200W.....$69
Mid-Tower/220W.....$99
Full-Tower/250W.....$130
DESK-TOP/200W.....$79

HD CONTROLLER
IDE 2HD/4FD/2S/1P.....$48
IDE 2HD/2FD/2S/1P/1G...$25
DTC SCSI.....$125
ADAPTEC 1542BK.....$275
CSC FastCache-64 IDE.....$199
CSC FastCache-64 SCSI..$249

NETWORK PRODUCTS

Hardware :
NE2000 coax $95
NE1000 coax $85
NE2000 10baseT .. $105
NE1000 10baseT .. $99
12 port concentrator .$525
Pocket LAN adaptor .$195

Sofetware:
Netware Lite $74
Netware 3.11(5 user) $585
Netware 3.11(10 users) $1299

WE PROVIDE HASSLE FREE TECHNICAL SUPPORT

486-33/50 SYSTEM

- intel 486-33/50 CPU
- 64 K Cache RAM
- 1MB Memory
- 1.2M or 1.4M Drive
- Mini-Tower Case
- 200W Power Supply
- 2HD/2FD IDEController
- 2 Serial Ports
- 1 Parallel Port
- 1 Game Port
- 101enhanced Keyboard
- Real-time Clock
- Coprocessor Socket

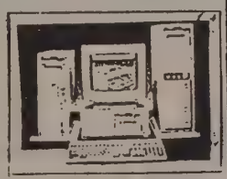
$739/1059

386-33/40 SYSTEM

- 386-33/40 CPU
- 64 K Cache RAM
- 1MB Memory
- 1.2M or 1.4M Drive
- Mini-Tower Case
- 200W Power Supply
- 2HD/2FD IDEController
- 2 Serial Ports
- 1 Parallel Port
- 1 Game Port
- 101enhanced Keyboard
- Real-time Clock
- Coprocessor Socket

$394/$404

386SX-20/25 SYSTEM



- 386SX-20/25 CPU
- 1MB Memory
- 1.2M or 1.4M Drive
- Mini-Tower Case
- 200W Power Supply
- 2HD/2FD IDEController
- 2 Serial Ports
- 1 Parallel Port
- 1 Game Port
- 101enhanced Keyboard
- Real-time Clock
- Coprocessor Socket

$325/$340

Come here for the great price and service

Specials of the Month

UPGRADE SPECIAL:

80486-50/64K

- intel 80486-50 DX 50 Mhz CPU
- opti 486WB chip set
- 64 K Write-Back cache RAM
- Norton SI 5.0: 108.1
- LandMark 2.0 : 167.25
- Power Meter 1.5 : 22.02 MIPS

was ~~$900~~, is **$780**

was ~~$130~~ is **$99**

ARTEC
Handy B/W Scanner
- 32 gray shades
- 100-400 DPI
- .tif, .gif, .pcx files
- includes software, OCR(Optical Char recognition)
- A great Buy

386SX-25
- 80386SX 25 Mhz CPU
- Headland or VLSI chip set
- 7-16 bits slots
- Max 8MB on Board
- Fast Page Mode DRAM Access

was ~~$155~~, is **$130**

ARTEC
3-button mouse

only **$10**

TAPE BACKUP

Colorado Tape Backup
DJ-10 120MB Tape Drive $219
DJ-20 250MB Tape Drive $290
AB-11 Adaptor for DJ-10 ..... $44

CD ROM

Mitsumi 630MB, Internal
W/Controller $450
CHINON 680MB, Internal
W/Controller $460

FAX/MODEM

9600/2400 internal fax/modem **$79**
9600/2400 pocket fax/modem **$149**
2400 internal modem **$44**
2400 external modem .. **$88**
9600 internal modem ... **$329**
9600 external modem .. **$379**

LAPTOP

LYNKS2000

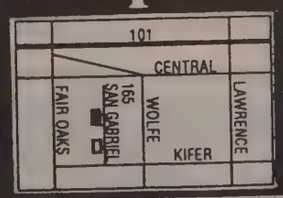
60MB .$1599
80MB .$1789

- Intel 80386SX-16/20 PROCESSOR
- 2MB RAM EXPANDABLE TO 4MB
- 640x480 LCD VGA
- 40/60/80MB HARD DRIVE
- 1.44MB FLOPPY DRIVE
- mouse,ext keyboard ports
- 1 parallel, 1 serial port
- weights 6 lbs,
- Deluxe Carrying Case

PanPacific Computer Corporation

165 SAN GABRIEL DR.
SUNNYVALE, CA 94086
TEL: (408) 720-1315
FAX: (408) 720-1102

HOURS:
M-F 9-6
SAT 10-5



VISA

One year warranty on parts/labor. Price/Availability subject to change w/o notice. Shipping and Handling not included/refundable. We assume no responsibility for typos. All prices reflect cash

MICRO MARKETPLACE

486 50MHz SYSTEM

- AMI BIOS
- IDE Controller
- Teac 1.2 MB or 1.44 MB Drive
- 1 MB Expandable to 32 MB
- 8K Byte Cache & Floating
- 64K Second Level Expandable Cache
- Maxi-Switch 101 Keyboard
- 2 Serial/1 Parallel/1 Game

$1098 | 256K Cache **$1158**

486 33MHz SYSTEM

- AMI BIOS
- IDE Controller
- Teac 1.2 MB or 1.44 MB Drive
- 1 MB Expandable to 32 MB
- 8K Byte Cache & Floating Point Unit
- **64K Second Level Cache**
- Maxi-Switch 101 Keyboard
- 2 Serial/1 Parallel/1 Game

$818 | 256K Cache **$878**

386 40MHz 64K CACHE SYSTEM

- AMI BIOS
- IDE Controller
- Teac 1.2 MB or 1.44 MB Drive
- 80387 Socket
- 1 MB Memory Exp To 32 MB
- 80387 Socket
- 64K Cache Expandable
- Landmark 65
- 2 Serial/1 Parallel/1 Game Ports
- Maxi-Switch 101 Keyboard

$488 | 386-33 MHz w/64K Cache **$468**

LIFETIME LABOR WARRANTY ON SYSTEMS FROM

386 25MHz SYSTEM

- AMI BIOS
- IDE Controller
- Teac 1.2 or 1.44 MB Floppy
- 80387 Socket
- 1 MB on Board Expandable To 8 MB
- 2 Serial/1 Parallel/1 Game
- Landmark 28 MHz
- Maxiswitch Keyboard

$418

25MHz 386SX SYSTEM

- 25 MHz 386SX Motherboard
- 1 MB RAM Up To 8 MB
- Teac 1.2 MB or 1.44 MB Drive
- IDE Controller
- 220W P/S
- OPTI Chip Set
- 101 Style Keyboard
- 2 Serial/1 Parallel

$378 | 16 MHz **$358**

8/16MHz 286 SYSTEM

- 512K RAM Exp To 4 MB On Board
- Teac 1.2 MB or 1.44 MB Drive
- IDE Controller
- 220W Power Supply
- 101 Keyboard
- One Year Warranty
- 2 Serial/1 Parallel

$268

AROMA

MUSIC BOARDS

SOUND COMMANDER $70
- Ad Lib Compatible
- With Speaker

WITH MONOLOGUE $85
(Text To Speech)

SOUND BLASTER $109

SOUND BLASTER PRO $189
CMS Chip $29
Speaker $29
MIDI Kit $52

TV CARDS

VIDEOMATE $195
- Turn Your **MONITOR** Into High Resolution **TV** Set

PC-VIDEO $165
- Turns **TV** Set Into **VGA** Monitor

HP 95LX PALMTOP PC

HP 85LX Palmtop PC With Lotus 1-2-3

ACE Memory For Your HP 95LX Programs & Files

512K ACE Card $239
1 MB Card 459
1.5 MB ACE Card 669
Connectivity Pack 99
Cable 35
Cable Adapter 15
ACE AA 101 99

PC POWER IN THE PALM OF YOUR HAND

$495 in stock

VIDEO CARDS

Diamond Stealth VRAM 1280x1024. $275

DIAMOND SPEEDSTAR HI-COLOR VGA 1024x768 1 MB 32,768 COLORS $145

ORCHID FARENHEIT $265
ORCHID PRO-DESIGNER IIs 1 MB (1024x768) 159

TRIDENT VGA(1024x768)1 MB $78
TRIDENT VGA(1024x768) 512K 46

PARADISE VGA (16 Bit OEM) 1024x768 w/512K Non-interlace 69
OTI VGA 800x600 /256K 36
OTI VGA 1024x768 /1MB 1280x1024 74
Color Graphics Card/Printer Port 29
GENERIC Monochrome Graphics w/Printer Port 17

DRIVE CONTROLLERS

Hard disk controller XT $48
DTC 7280 MFM Contrl (1:1 Inter) 65
DTC 3280 SCSI 125
DTC 6282-24 ESDI (1:1 INT) 135
Floppy Controller 360/1.2/720/1.44 MB 35
Ultrastore ESDI 32K Cache 155
IDE Controller 20
IDE Controller/4 Floppy 35
IDE Controller w/2S/1P/1G 35
Adaptec SCSI 1542 BK w/Software 275

I/O CARDS

RS-232 card $17
AT-I/O (2S/1P/1G) 20
Printer Card 14
Game Card 14

MEMORY EXPANSION CARDS

Everex 3 MB RAM card $84

KEYBOARDS

Keytronic 101 ..... $45
Mitsumi 101 39
Chicony 5161 101 Keyboard (clicking) 39
MAXISWITCH 101 Keyboard 39

MONITORS

NANAO 9070U 1024x768 ..... $880
9080i 1280x1024 16" 1045
9500 20" 1745
F550i 17" 1198
T560i 17" 1895

VIEW SONIC
V7 17" Flat Screen (72Hz Non-Int) $1125
V6 Non-Int 14" 375
V5+ (Trinitron tube) 14" .25 545
V4E 1024x768 VGA 14" 319
V2 640x480 .29 dot pitch 295
SUPERTRON VGA Mono 115

EYEQ 1024x768 VGA .28/NI 295/335
EYEQ 1024x768 .39 235
SUPERTRON VGA Mono 115
KFC Super VGA 1024x768 .28 295
KFC Super VGA 1024x768 Non-inter 335
NEC 5FG ..... CALL
4FG 785
3FG 675
SUPERTRON 14" Flat Screen (Amber or Paper White) 95
12" Amber Mono 75
SONY 1304 Non-Int (1024x768) 14" 570
1604S 16" 1025

MODEMS & FAX MODEMS

EVEREX Internal 2400/MNP5 ..... $79/129
ZOLTRIX 2400 Internal Modem 49
ZOLTRIX 24/96 Pocket Fax/Modem 165
9600 BPS Modem V.42 295
24/96 Fax Modem (Send/Receive) 79

CD ROM

SONY (with controller no software)
CDU 535-01 380 MB Sony Bus int Hf/Ht $387
CDU 541-01 380 MB True SCSI Bus int Nt 515
CDU 541-01 Without Controller 425
Sound Blaster Pro, CD ROM Upgrade kit (5 CD Titles CD-ROM int) 385

DISK DRIVES

TEAC 360K/1.2 MB $60/59
3.5" (1.44 MB) 58
SEAGATE
ST315A IDE 40 MB 205
ST-251-1 (28ms) 40 MB 249
MAXTOR LXT-213 (SCSI) 579
LXT-340 925
ESDI 8380-338 MB 1075
SCSI/ESDI 8760-E 650 MB 1350
CONNER 40 MB 215
60 MB 235
80 MB 285
120 MB 19ms 345
170 MB 17ms 435
212 MB 16ms 595
MAXTOR 80 MB 19ms (32K Cache) 295
130 MB 15ms (64K Cache) 365
QUANTUM 120 MB 15ms 365
240 MB 15ms (64K Cache) 605

NETWORK CARDS

Ethernet Star 8 Bit $95
Ethernet Star 16 Bit 105
Arcnet Star/Bus 8 Bit 49
10 BT Ethernet 16/8 Bit 125/115

TAPE BACK-UP

COLORADO Tape Back-Up 120 MB $190
Tape Back-Up 250 MB 265
DC-2120 Tape Cartridge 20
COLORADO Drive External Kit 119

MAIN BOARDS

486-50 MHz w/CPU w/64K/256K $925/985
486 33 MHz w/CPU w/64K Cache 615
386-40 (64K Cache) w/CPU 295
386-33C (64K Cache) w/CPU 275
386 25 MHz (w/CPU) 215
386-25SX OPTI 165
386-16SX OPTI 145
286 16 MHz 85

COMPUTER CASE

14" Baby AT Case w/200W P/S $79
17" Baby AT Case w/200W PS 89
Vertical Case w/220 or 250 W PS 139
Medium Vertical Case 115
Mini Vertical Case 79

LOGITECH PRODUCTS

Logitech Trackman (Ser/Bus) $65/69
Logitech Scanman Model 32 256 Scale 165
Logitech Bus Mouseman 64
First Mouse 37
Mouse (Serial 9 Pin) 18
Windows 3.0 w/Logitech Mouse 65
Microsoft Mouse Bus/Serial 85

PRINTERS

Panasonic KXP-1624 132 Column $355
KXP-1180 w/Cable $155
KXP-1123 209
KXP-1124i 295
Citizen GSX 200 (9 Pin) 165
GSX 130/SX 140 (24 Pin) 239/299
Color Option For Above Printers 45

MISC.

Public Domain Software ..... $2.99 disk
MS DOS 49
Windows 3.0 49
6' printer cable 3.50
10' printer cable 6
Keyboard Extension cable 5
Monitor Extension cable 5
Keyboard Drawer/Under Table 27/18
Computer floor stand 5.99
Power Center 18
Printer switch box (AB/ABCD) 9.99/19
Power supply 150/220W 34/48
Memory Chips (DIPS/SIPPS/SIMMS) CALL
Math Co-Processors ..... CALL
Disk Box 7.50
Power Strip 7
Sound Blaster (OEM Version) 116

U.P.S.

550 VA $255

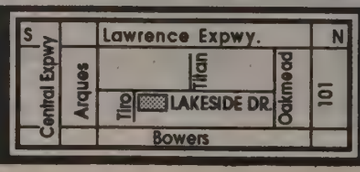
Always Ready to Offer More Assistance

AROMA computer systems

Always Ready to Offer More Assistance

470 LAKESIDE DR Suite F
SUNNYVALE, CA 94086
Tel: (408) 736-4355 M-F 9-7
FAX (408) 736-4356 Sat 10-4

Prices Subject To Change w/o Notice
Prices Good At Sunnyvale Store Only



NEW MODESTO OFFICE
3430 Tully Rd. Suite #21
Modesto, CA 95350
Tel: (209) 525-8080
FAX: (209) 525-8120

Call us with your best quote and see if we can beat it!

Customize To Meet Your Exact Needs

$2195

486 ISA
50MHz w/256K Cache

- SVGA monitor
- 4 MB RAM expandable to 64MB
- 1.2, 1.44 Floppy Drive
- 120 MB Hard Drive
- 2 Serial, 1 Parallel, 1 Game Port
- 101 Keytronic Keyboard
- SVGA Card w/1MB

$1695

486 ISA
33MHz w/128K Cache

- SVGA monitor
- 4 MB RAM expandable to 64MB
- 1.2, 1.44 Floppy Drive
- 120 MB Hard Drive
- 2 Serial, 1 Parallel, 1 Game Port
- 101 Keytronic Keyboard
- SVGA Card w/1MB

WE'RE OFFERING THE BEST DEALS ON ALL 486'S & 386'S

Build your own!

Motherboards

286-16 MHz	$95
386-SX 20 MHz	265
386-DX 25 MHz	328
386-DX 33 MHz w/64 cache	428
386-DX 40 MHz w/64 cache	528
486-DX 25 MHz w/128 cache	895
486-DX 33 MHz w/128 cache	995

Monitors

Super VGA Monitor	$275
Hyundai Interlaced	
Orchid Prodesigner II w/1M	175
Impression plus non interlaced	375
VGA card w/256K	49
VGA card w/512K	75
VGA card w/1 MB	95

Hard Drives

CONNER, MAXTOR, SEAGATE

40 MB IDE	$169
80 MB IDE	295
120 MB IDE	355
200 MB IDE	558

Miscellaneous

1.2 MB Floppy	$64
1.44 MB Floppy	64
AT I/O Ports	17
IDE Controller	19
Tape Backup Colorado 120	245
2400 Baud Modem	48
96/24 Baud Fax Modem	125
Mini Tower Case	68
Middle Tower Case	110
Full Tower Case	128

We have the best support staff to help guide you to the right system for your needs.

486SX-20MHz	$1295
386-40MHz w/64K Cache	$1050
386-33MHz w/64K Cache	$999
386-25MHz	$945

All Systems Include:

- 1 MB RAM expandable to 32MB
- AMI BIOS
- 1.2 MB Floppy Drive
- 80 MB Maxtor or Conner HD w/32K Cache
- SVGA Monitor w/16 bit Video Card
- 1:1 IDE Controller
- 2 Serial, 1 Parallel, 1 Game Port
- Mini Tower Case w/200W PS
- 101 Enhanced Keyboard

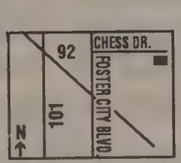
Can't beat this price for a complete 286-16MHz

- 1 MB RAM expandable to 4MB
- Socket 80287 & AMI BIOS
- 6x16 Bit, 2x8 Bit Slots
- Real Time Clock w/Battery Backup
- 40 MB Hard Drive
- 1.2 MB Floppy Drive
- 2 FD/HD Controller
- 200W PS w/Case, holds 5 drives
- 101 Enhanced Keyboard
- SVGA Monitor

$795

Roger Willis Computers

1163 Chess Drive, Suite D
Foster City, CA 94404
(Next to San Mateo Bridge)



VISA MasterCard

2 Years Labor/1 Year Parts
Prices subject to change without notice

Tel: (415) 572-2996
Tel: (415) 574-4798
Fax: (415) 573-1566

MICRO MARKETPLACE

GoldStar VGA MONITORS

PLEASE CALL FOR PRICES & SPECS
QUANTITY DISCOUNTS AVAILABLE

GOLDSTAR Monitors are now back in stock in large quantities!!

Call for Dealer Prices.

MODELS:

New Model	1490	1280x1024	14" VGA .26
	1460 Plus	1024x768	14" VGA .28
	1453	1024x768	14" VGA .39
	3051	640x480	14" VGA .39

MONTHLY SPECIAL:
MOTHERBOARD: 386SX-25 MHz
VLSI CHIPSET
CALL FOR QUANTITY PRICING!

CHINON
FLOPPY DRIVES
"THE QUALITY AND PRICES BEATS TEAC!"

SPECIAL - CALL FOR PRICING

WESTERN DIGITAL HARD DISKS
WE CARRY A FULL LINE OF W.D. IDE HARD DISKS
80 MB, 120 MB, 200 MB
WHOLESALE ONLY!
DEALERS CALL FOR PRICING!

MICRO DISTRIBUTION CENTER

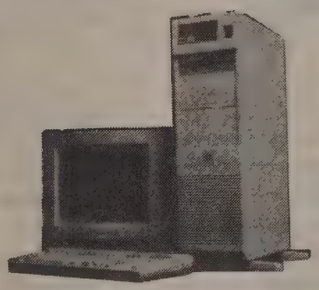
3320 Edward Avenue, Santa Clara, CA 95054 **(408) 492-1715 FAX (408) 492-9539**
15523 Broadway, Center Street, Gardenia, CA 90248 **(213) 515-0155**

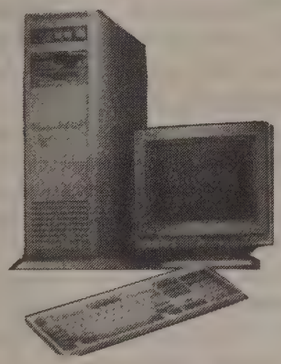
*AT, XT is a registered trademark of IBM Inc.

SATISFACTION 100% GUARANTEED

NEW, LARGER FACILITIES ACR TO BETTER SERVE YOU

HIGH QUALITY Great Value Affordable Price





当社は、ここシリコンバレーにて、10年にわたるPC関係の販売実績を持っております。そして、その顧客にはINTEL、SCO、等の優良企業が多数あり、MS-DOSをはじめNETWARE、OS/2、UNIX等、各種ソフトウエアの経験も豊富であります。
この度、日本の習慣により一層のサービスを提供するため、日本語の判るスタッフを用意致しました。今後の弊社へのお問い合わせは日本語でお気軽にどうぞ。
また、当社は日本の習慣に対しては、その送料等を考え合わせ、責任の持てる高品質な製品しか販売しておりません。そして、万一保証期間中に故障が発生した場合、その部品を送っていただければ、返納時の送料は当社にて負担致します。

486-50 SVGA Cache System
•Basic Configuration •120 MB 16ms Hard Disk Dr
•14" SVGA Monitor w/16-Bit SVGA Card
$1780

286-33 SVGA Cache System
•Basic Configuration •120 MB 16ms Hard Disk Dr
•14" SVGA Monitor w/16-Bit SVGA Card
$1330

386-40/64KB Cache SVGA System
•Basic Configuration •120 MB 16ms Hard Disk Dr
•14" SVGA Monitor w/16-Bit SVGA Card
$1080

386-33/64KB SVGA System
•Basic Configuration •120 MB 16ms Hard Disk Dr
•14" SVGA Monitor w/16-Bit SVGA Card
$1060

386-25SX SVGA System
•Basic Configuration •40 MB 28ms Hard Disk Dr
•14" SVGA Monitor w/16-Bit SVGA Card
$810

486-33 EISA 256KB SVGA System
•Basic Configuration •120 MB 16ms Hard Disk Dr
•14" SVGA Monitor w/16-Bit SVGA Card
$1910

486-SX20 Cache SVGA System
•Basic Configuration •120 MB 16ms Hard Disk Dr
•14" SVGA Monitor w/16-Bit SVGA Card
$1145

MOTHERBOARDS

386SX-20	$154
386SX-25	162
386-33/64K Cache	278
386-40/64K Cache	298
486-33/64K Cache	570
486-50/64K Cache	965

*BASE SYSTEMS

-Motherboard w/1 MB RAM
-Internal clock
-1.2 or 1.44 FD
-Math coprocessor socket
-2S, 1P, 1G ports
-Enhanced Case w/power supply
-101 keyboard

-AMI 386SX/20	$719
-AMI 386/33	985
-AMI 486/33 ISA	1816
-AMI 486/33 EISA	2096
-Mylex 486/33 EISA	2096
-Micronics 386SX/20	Call
-Micronics 386/33	798
-Micronics 486/33 ISA	1458
-Micronics 486/33 EISA	1598

*F/H CONTROLLERS

-WD1007WA2 ESDI	$139
-Ultrastor 12F ESDI	295
-7000 FAST SCSI	295
-Adaptec 1542B SCSI	247
-IDE controller	14
-Mylex DCE 376 EISA	650

*HARD DRIVES

-Conner All Models	Special
-Maxtor All Models	Special

-Seagate All Models
-WD IDE, Fujitsu, Quantum
-Other Brands Available
-Always Special Opti Drive

*VIDEO CARDS

-Diamond Speedstar all models	
-Video 7 VRAM II	
-Orchid Pro Designer IIs w/1MB	$189
-ATI Wonder XL	
-Hercules Graphics Station	
-X-Performance	
-CAD Race	
-Trident 9000 w/1MB	89
-United Solution w/1 Meg	
-Matheus	Call

*MONITORS

-Supertron	$297
-AlphaPlus (non-int)	
-Sony 1304	565
-NEC 3FG/4FG/5FG/6FG	
-Nanao All Models	
-Hitachi All Models	
-Cornerstone	
-Toshiba 17"	1250
-Raster Ops	
-Mitsubishi	Special

*POWER SUPPLY & CASE

-Mid-vertical w/PS	$125
-Full vertical w/PS	139
-Extra 10 bay vertical w/PS	165

-PC Power & cooling
-U.S. made all models
-Desktop full & baby

*KEYBOARD & OTHERS

-Keytronics 101	$43

-Omni keyboard all models
-Other brand available

-Sound Blaster	$134

-Sound Blaster Pro

One Year Limited Warranty
Prices Subject To Change w/o Notice

*EVEREX

-Step 386-33	Call
-Step 486-33	Special

*MODEMS

-USR HST, Dual Standard
-Telebit 1000, 2500, 3000
-Hayes all models
-Everex all models
-Fax/modem 9600

*MOUSE

-MS/Logitech ser/par
-All models

*TAPE BACK-UP

-Archive VP 150, 250
-Mountain 150, 250, 2.2G
-Colorado 40, 120, 250

*PRINTERS

-Panasonic all models
-Okidata Fujitsu
-HP laser all models
-Cannon laser
-QMS Citizen

*NETWORKS

-Novell, software & hardware
-Artisoft (LANtastic)
-SCO, Proteon, Aquila
-3COM

*SCANNER & DIGITIZER

-HP Scanner 2C
-Microtek
-UMAX UC-300
-Summa Graphics
-Kurta

*UNIX & XENIX

-Interactive
-SCO UNIX
-TCP/IP & NFS
-DEC Station 5000

*LAPTOP & NOTEBOOK

-Toshiba, Sharp, AST
-NEC, Everex, ALR
-IBM. Compaq, Sharp

*AST

-Premium 386SX/20	$1599
-Premium 386-33	3942
-Premium 486-33	5059

*COMPAQ

-Deskpro 386SX/20	$1395
-Deskpro 386-33	5095
-Deskpro 486-33	12,011

*IBM

-PS/2, 55SX	$1765
-PS/2, 70B21	2497
-PS/2, 80A61	4485

*APPLE

-MAC LC/20	$2275
-MAC SI/30	3295
-MAC IIFX	6375

*HP

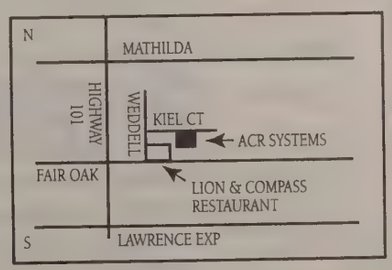
-Vectra 386SX	Call
-Vectra 386-33	Special
-Vectra 486-33	Call

We Are An Authorized Dealer

ACR SYSTEMS
1038 Kiel Ct.
Sunnyvale, CA 94089

(408)
734-9797
Fax (408) 734-9798

Mon-Fri: 9AM-6PM
Sat: 10AM-5PM



Michelangelo

What Have We Learned?

BY PAUL HOFFMAN

The public relations people at companies like Microsoft, Borland, and Lotus may be wondering how they could get on the front page of the nation's newspapers as often as the person who wrote the Michelangelo virus. With all the wonderful new things that personal computers have been doing for people in the past few years, the computer news we get in the mass media, ironically enough, is based on technology's destructive aspects. It goes to show what sells news.

We're certainly fortunate that the news media hyped Michelangelo as much as they did, however. Had they not, thousands (or tens of thousands) of people would have lost all the work on their hard disks. Although the numbers bandied about by "industry sources" as to how many computers were infected with Michelangelo varied, it is clear that the virus had spread itself widely and that it was every bit as destructive as it was portrayed. As it turned out, in the aftermath of the media blitz only a few thousand people lost the data on their hard disks. That is, of course, a few thousand too many.

(In case you were on another planet during the first week of March, the Michelangelo virus had appeared on tens of thousands of Intel-based PCs. On March 6, when someone with an infected PC booted their system, the virus wiped out enough of their boot drive to make it unusable. In the week before the 6th, the Michelangelo virus got significant news coverage in every major newspaper, on television, and radio.)

It's always best to look at situations like this as learning experiences, bitter though they may be. This experience has taught us many things we'll do well to remember for many years. Given the attention span of many people, that may be asking for too much, but there are even a good number of short-term lessons to be learned from the virus, the news coverage of it, the way people reacted to it, and the relatively low number of people who were significantly damaged by it.

Many security professionals are very worried about complacency in the aftermath of the Michelangelo scare. Michelangelo may have been the most widespread of the truly destructive viruses, but it's not the only one.

MICHELANGELO IS NOT THE ONLY VIRUS

PC users everywhere are patting themselves on the back about having averted a disaster by wiping Michelangelo off their disks. Fine, but what about the hundreds (literally) of other viruses out there? If you think you're "safe" because you got one of the Michelangelo-specific virus checkers and either didn't have it or cleaned it off your system, you're dead wrong.

Many security professionals are very worried about complacency in the aftermath of the Michelangelo scare. Probably the vast majority of people scanned or cleaned their PCs using programs that only look for one virus: Michelangelo. Michelangelo may have been the most widespread of the truly destructive viruses, but it's not the only one. Also, those programs only checked for Michelangelo once. If you get the virus again, you may find yourself with an involuntarily cleaned hard disk next March 6. In this sense, the free Michelangelo-specific checkers may have been great in the short term, but they cause damage in the long-term by lulling the public.

If you have a PC, you should protect it. There are numerous commercial and shareware virus programs that both scan your hard disk for every known virus and help prevent viruses from getting on your system in the first place. If you don't use one of those programs, you're just as much at risk now as you were on March 5. In addition, you must be sure to use the newest version of the program at all times. Many people were hit by Michelangelo even though they had scanned their systems, because they scanned with software that came out before Michelangelo. No virus scanning program can predict how future viruses will act or how to identify them.

It is also important to remember that the PC is not the only computer that can be infected. In the days preceding March 6, many Macintosh owners joked about people calling them up to warn them about Michelangelo. They patiently explained that Michelangelo could only affect PCs. However, in ignoring Michelangelo and its effects, they may have forgotten that the Macintosh is just as susceptible to viruses as the PC is. To date, none of the known Macintosh viruses have had the disastrous effects of Michelangelo, but there is no way of knowing if that will hold true in the future.

ALWAYS BACK UP YOUR SYSTEM

Are you tired of hearing that yet? You should be.

It's sad that such an obvious statement

Copyright © 1992 by Paul Hoffman. All rights reserved.

BUY AMERICAN...BEST BUY!

50-MHz 486 ISA PC

Axik Ace Cache 486/WB-50

BEST PRICES, QUALITY SERVICE BACKED BY 7 YEARS MOTHERBOARD DESIGN/ MANUFACTURER & SYSTEM INTEGRATION EXPERIENCE

Reviewed By

INFO WORLD

Feb 24, 1992

Criterion	(Weighting)	Score
Performance		
Speed-		
CPU intensive	(50)	Very Good
Disk intensive	(50)	Very Good
Multitasking	(50)	Very Good
Database server	(75)	Excellent
File server	(75)	Excellent
Compatibility	(150)	Excellent
Expandability	(100)	Excellent

In database server test, the **Axik** surpassed Dell, the previous leader, by 5 percent in transactions per minute (TPM). The **AXIK** was 4 percent faster than ALR. In the previous review, we attributed part of Dell's efficiency to its three-bay drive array. The **Axik** excels in this capacity with only one drive.

The **Axik ACE** is a superior high-end file server with an extremely low price.

Info World 2/24/92

APPLICATIONS TESTS			INFO WORLD	
486/50 PCs				
(test times in minutes:seconds)				
	AXIK ACE CACHE 486/WB-50	**ALR Powerpro 486/50**	**Compaq (1) Deskpro 486/50L**	**Dell (1) Powerline 450SE**
PRICE	**$4,399**	**$12,889**	**$12,999**	**$12,899**
File server tests				
Office test 24-station	01:57	01:59	01:53	01:52
Database file server(2)	1.70	1.64	0.71	1.61
Workstation tests				
CPU intensive	07:24	06:29	06:23	07:32
Disk intensive	21:36	17:53	15:59	23:48
Multitasking	01:23	01:03	01:02	01:08

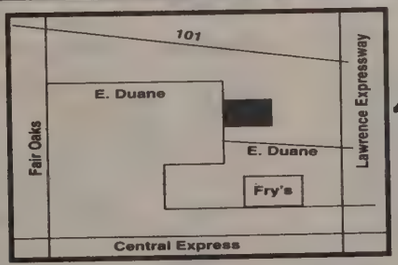
1)Compaq Deskpro 486/50L and Dell Powerline 450SE Reviewed January 20, page 97 .

2) Transaction per minute for 24 stations, with a theoretical maximum of 6.0; higher indicate better performance

SYSTEM	MB +CPU	BASIC SYSTEM	BASIC + 40 MB HD +12"	BASIC + 40 MB HD +VGA	BASIC + 40 MB HD +SVGA	BASIC + 80 MB HD +SVGA	BASIC + 120 MB HD +SVGA	BASIC + 200 MB HD +SVGA
486-50C EISA	$1459	$1699	$1959	$2094	$2129	$2219	$2299	$2519
486-33C EISA	1099	1299	1569	1719	1759	1849	1909	2109
486-50/256K	–	–	Best	Best	Best	Best	Best	Best
486-33/64K	569	749	1029	1179	1209	1299	1359	1559
486-25/64K	519	699	979	1129	1159	1249	1309	1509
486SX-25/64K	359	539	819	959	999	1089	1149	1349
386-40/64K	299	479	759	899	939	1029	1089	1289
386-33/64K	289	469	749	889	929	1019	1079	1279
386-25	209	389	669	809	849	939	999	1199
386SX-25	169	349	629	769	809	899	959	1159
386SX-16	139	319	589	739	779	869	929	1129
286-16	79	259	539	689	719	809	869	1079

BASIC SYSTEMS INCLUDE: M/B, CPU, 1 MB RAM, (512KB For 286) 1:1 2 FD/2 HD Controller, I/O (2S/P/G), 1.2 MB or 1.44 MB FD, Math Co-Processor Socket, Case + Power Supply, 101-Key Enhanced Keyboard.

- One Year Parts & Labor Warranty
- Prices Reflect COD Price
- Prices & Availability Subject To Change W/O Notice
- Shipping, Insurance & COD Charges Are Extra & Non-Refundable
- Not Responsible For Typo Errors.
- Trademarks Are By Respective Companies



Next To Deli Cafe

Axik *Axik Computer, Inc.*

A Technical Service Company

MasterCard VISA

HOURS:
Mon-Fri: 9-6:30
Sat: 10-4:30

1031 East Duane Ave., #F
Sunnyvale, CA 94086
TEL: (408) 735-1234
FAX: (408) 735-1437

needs to be made, but there were hundreds of people who lost a great deal of their work when Michelangelo struck because they hadn't backed up their disk in a week, a month, or a year. Not backing up your work regularly is like walking around with a sharp knife between your teeth: it's fine as long as you don't stumble. More importantly, the pain is easily avoidable.

If you backed up your hard disk every day, recovering from disaster—whether virus or theft—would be much simpler. Backing up should be as much a part of your computer routine as shutting off your PC. You can hardly back up too often.

Now that viruses are a part of the public mentality about computers, backups should be too. Fortunately, backups have already made it into the media to a certain degree. Near the end of last year's blockbuster, *Terminator 2,* one cop says to another that he hopes that the just-destroyed facility has off-site backups. Off-site backups are not as important for preventing virus disasters, but can certainly be important in many other circumstances.

ASSUME YOU HAVE A VIRUS

An unfortunately large number of people heard the publicity about the Michelangelo virus but didn't get any detection software because they thought they were safe. When they started their systems on March 6, they found out they were wrong. Some decided to wait and check for the virus on March 5, but still lost their hard disks when their PCs' clocks were many days fast. All made the same assumption: It won't happen to me.

"But I never downloaded software from a BBS." "No one but me ever uses my computer." "I only use store-bought software." Such statements are nice, but incredibly dangerous. Computer viruses are like sexually and blood-transmitted diseases: only 100% caution is sufficient.

Many people got the Michelangelo virus from commercial software. Companies like Intel and Lotus spread the virus on distribution disks of their software. Many people found the virus on new PCs: it had been accidentally put there by the PC manufacturers when they formatted the hard disk. Because there are dozens of ways for different viruses to get to your system, you should only assume you are virus-free immediately after running a virus-checking program.

The people who got full virus checkers instead of the Michelangelo-specific ones often found that they didn't have Michelangelo, but did have another virus, such as the now-common "Stoned" virus. Stoned can infect your floppies like Michelangelo, so people who found it had to then go through and clean off all the floppies they used. In one case, a person cleaning Stoned off his floppies found a diskette with a copy of Michelangelo that had not yet infected his system.

If you assume you have a virus at any time, you are much more likely to use virus protection software. You should certainly not assume that there will be nearly as much publicity for the next nasty virus; in fact, given the way the popular press treats "issues," there's sure to be much less.

A corollary to the assumption that you have a virus is the assumption that things can go wrong on your system at any time. Anyone who has used a computer for more than a week knows that mysterious things happen, then disappear. Sometimes they persist but never get explained. Sometimes they damage your data. Again, the best remedy for an unstable system, regardless of the cause, is regular and reliable backups of everything.

DON'T TRUST THE MAINSTREAM PRESS

The newspaper stories and television news-

Continued on page 250

Free Version

Announcing TREEBASED *Financial Software*™

Tree Based adds the dimensions of flexibility and vision to money management software. By expanding and collapsing the many levels of a tree structure, you can interact with your entire financial state on one screen. You don't have to flip-flop from register to menu to register to work with different accounts. You don't even have to generate a report to get the big picture. It's all there on the work sheet. Nothing is left to the imagination.

"Very powerful and flexible" -- Computer Shopper, July 1991

"Tree Based lets you look over an account structure better than any product I've seen yet." -- Computer Currents, March 1992

"It provides a tremendous amount of flexibility and adaptability to a diversity of needs." -- MicroTimes, November 1991

Full Version $69.95
(Add 4.50 S&H, CA add 5.42 tax.)

60 day full satisfaction, money-back guarantee

- Importing from Quicken
- Custom Work Sheets
- Reconciling
- Split Transactions
- Unit-based Transactions
- Exporting/Importing
- Memorized Transactions
- Automatic Entry
- Budget Analysis
- Transaction Search
- Transaction Filtering
- Context Sensitive Help
- Online Tutorials
- Onscreen Prompts
- Check Printing
- Plain Paper Invoicing
- Report Generation
- Real Time Totals
- Pop Up Calculator
- Property Management
- Forecasting
- What-if Analysis

Free Version Limits
25 Accounts
No Exporting
3 Tree Levels
No Manual

Tree Based
1932 Meyer Place
B-2
Costa Mesa, CA
92627

Call Now (800) MNY TREE (800) 669 8733

EFI'S Discount Computers

3Com® AST AGEMICH INC. EVEREX Canon SAMSUNG MITSUBISHI ELECTRONICS TOSHIBA intel ZENITH data systems NEC i·MEGA Makers of the Bermuda Box Acer

SPECIALS

Name Brand Notebook 386SX/20
40MB
1.44 Drive
DOS 5.0
$1499.00

Lowest Prices on all AST Products Guaranteed!
AST Notebook
386/SX 25
40/60/80 MB
CALL

Software Blowout
Lotus 3.1+ $339
WordPerfect 5.1 for Windows 239
Harvard Graphic 3.0 .299
Pagemaker 4.2 for MAC 399
SAM 3.0 49

Name Brand 386SX/20
5MB RAM
130 MB Hard Disk
.28 SVGA Monitor
1.44 & 1.2 Drives
DOS 5.0, Mouse, Windows 3.0, Lotus 1-2-3
$1659
COMPLETE SYSTEM

14" VGA
1024x768 .28 Monitor
$299.00

LAN Cards
3Com Tiara
SMC Token Ring

altima OKIDATA IBM COMPAQ ALR ALPS AMERICA Panasonic EPSON® HEWLETT PACKARD Hayes CITIZEN

Fax for inquiries, price bids & purchase orders: (510) 283-1744
Free delivery and installation of systems within 30 miles. Free in-store installation of any product. Prices reflect 3% cash discount.
CALL US FOR YOUR PRICE ON ANY PRODUCT.
HOURS: MON.-FRI. 10-6, SAT. 10-2
3441 GOLDEN GATE WAY, LAFAYETTE, CA 94549
(510) 283-1700
CALL BEFORE YOU BUY
We are actively seeking minority businesses supplying computer products, Please call!
Prices may change without notice. 90 day warranty on all products.

WE CAN BEAT THE COMPETITION!

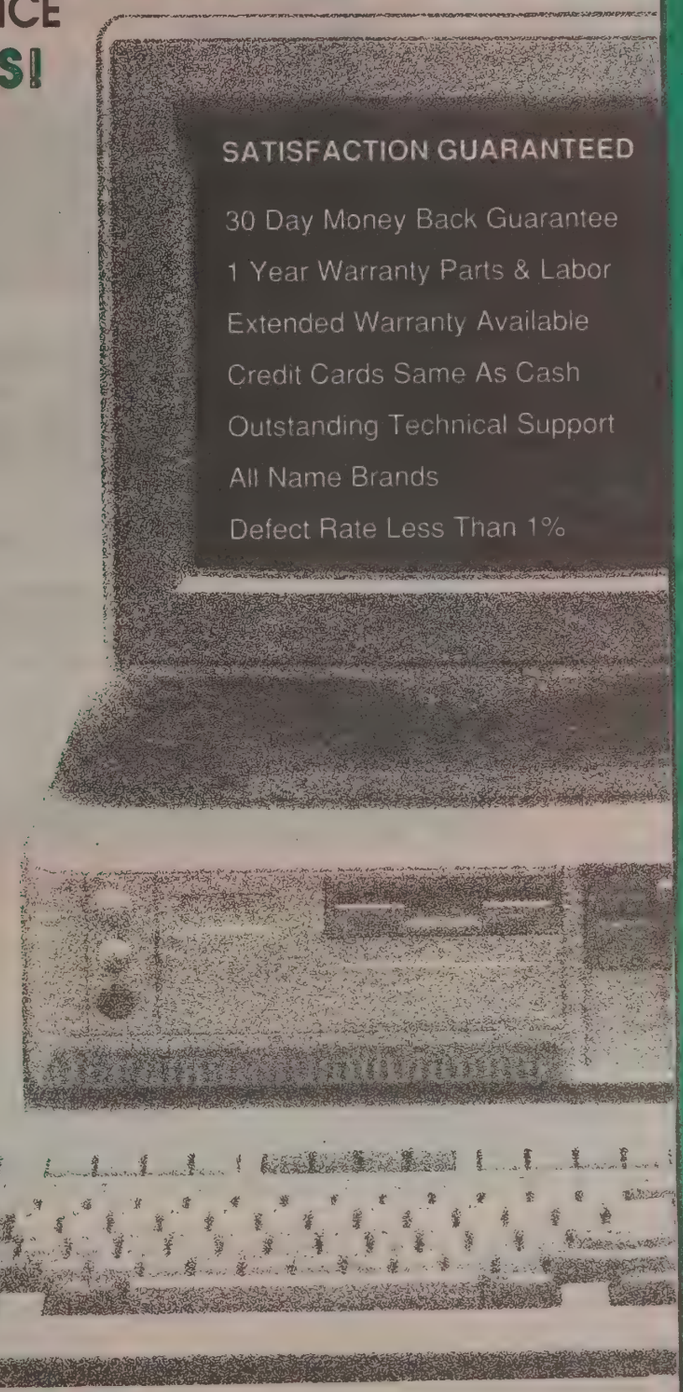
WITH OUR HIGHER QUALITY & BETTER SERVICE

CALL US FOR LATEST PRICES!

EISA 486-50 w/128K Cache & 120 MB HD	$2599
EISA 486-33 w/128K Cache & 120 MB HD	$1999
486-50 w/128K Cache & 120 MB HD	$1459
486-20SX 120 MB HD	$909
486-25SX 120 MB HD	$959
486-33 w/64K Cache & 120 MB HD	$1129
386-33 w/64K Cache & 120 MB HD	$819
386-40 w/64K Cache & 120 MB HD	$829
386-25 40 MB HD	$609
386-25SX 40 MB HD	$579
386-20SX 40 MB HD	$569
386-16SX 40 MB HD	$539

SATISFACTION GUARANTEED

- 30 Day Money Back Guarantee
- 1 Year Warranty Parts & Labor
- Extended Warranty Available
- Credit Cards Same As Cash
- Outstanding Technical Support
- All Name Brands
- Defect Rate Less Than 1%



ALL SYSTEMS INCLUDE:

Motherboard and CPU w/1 MB
Math Coprocessor Socket
1:1 2HD/2FD Controller
2 Serial, 1 Parallel & 1 Game Port
1.2 MB or 1.44 MB Floppy Drive
Internal Clock/Calendar
Enhanced AT Case w/ Power Supply)
Enhanced 101 Keyboard
48 Hour Burn-In

UPGRADES

CACHE MEMORY

64 to 128K ..$29
64 to 256K ..$69

CASES (UPGRADE)

Mid Height Vertical $29
Full Height Vertical $59

VIDEO PACKAGE(S)

- 16" Non-Interlaced $1179
  Orchid Pro-Designer IIS w/1 MB
- 14" SVGA Non-Interlace
  SVGA w/1MB.....439
- 14" Super VGA .28 .....$339
  SVGA w/512K
- 14" VGA .39 .....$269
  800 x 600 VGA w/ 256K
- 14" Mono + MGP $109

MEMORY

$38 per MB

HARD DRIVES

40 MB $169
80 MB $269
100 MB $299
120 MB $329
210 MB $549

ORDERING INFORMATION: Visa and Mastercard accepted. Shipping and handling additional. Next day delivery available. Corporations rated 3A2 or better and government accounts are accepted on a net 30 basis. C.O.D. orders over $500 add $10.00 special handling charge. All returns must have prior authorizations from our Customer Service Department (408) 433-0188. All returns must be in original packaging and include all warranty cards and manuals. Incomplete product returns, unauthorized returns and refused shipments are subject to a 20% restocking charge. 30 Day money back guarantee for IBM non-compatibility or software compatibility. All prices and specifications are subject to change without notice.

CREDIT CARDS SAME AS CASH

TEL (408) 433-0188
FAX (408) 433-0318

STORE HOURS:
M-FRI 9-6 SAT 10-3

WIT WANG INTERNATIONAL TRADE, INC.

2073 O'Toole Avenue
San Jose, CA 95131

HI-TECH USA

Milpitas
Phone: (408) 262-8688
Fax : (408) 262-8772

San Carlos
Phone: (415) 508-8688
Fax: (415) 508-0383

MONTHLY SPECIALS		286-12	286-16	286-20	386SX-16	386SX-25	386DX-25	386DX-25 64K Cache
MOTHERBOARD WITH CPU		$66	$72	$82	$122	$146	$192	$242
BASIC SYSTEM		Basic System Configuration:		*Motherboard and CPU *1:1 2HD/2FD Controller *1.2MB or 1.44MB Floppy Drive		*1MB RAM *Enhanced Case W/Power Supply *101-Key Enhanced Keyboard		
		$232	$242	$262	$282	$312	$362	$402
BASIC SYSTEM +12" MONO MONITOR +MGP CARD	+40 MB	$510	$520	$540	$560	$590	$640	$680
	+80 MB	$596	$606	$626	$646	$676	$726	$766
	+120MB	$646	$656	$676	$696	$726	$776	$816
BASIC SYSTEM +VGA COLOR MONITOR +VGA CARD (256KB	+40 MB	$656	$666	$686	$706	$736	$776	$826
	+80 MB	$740	$750	$770	$790	$820	$870	$910
	+120MB	$790	$800	$820	$840	$870	$920	$960
BASIC SYSTEM +SVGA MONITOR +SVGA CARD (512KB)	+40 MB	$696	$706	$726	$746	$776	$810	$866
	+80 MB	$780	$790	$810	$830	$860	$900	$950
	+120MB	$830	$840	$860	$880	$910	$960	$1,000
BASIC SYSTEM +NON-INTERLACED MONITOR (.28) +SVGA CARD (1MB)	+80 MB	$930	$940	$960	$980	$1,010	$1,060	$1,100
	+120MB	$980	$990	$1,010	$1,030	$1,060	$1,110	$1,150
	+200MB	$1,220	$1,230	$1,250	$1,270	$1,300	$1,350	$1,390

Terms and Conditions

1. One year parts and labor warranty.
2. Knowledgeable technical support engineers in service.
3. Prices and availability subject to change w/o notice.
4. Shipping, insurance and COD charges are extra and non-refundable.
5. Return shipping must must be inssured, prepaid and bearing an RMA# on the shipping label.
6. Defective items replaced or repaired at our discretion.
7. Not resposible for typos.
8. All returns subject to 15% restocking fee and cover only Hi-Tech USA brand computers, excludes peripherals, software. No refunds after 30 days.
9. Superior reputation for service, quality & value.
10. Purchase orders are welcomed and subject to approval.

Why do smart customers keep buying from HI-TECH USA? Simply because we deliver the best values.

Call and join our smart customer list: ABC, AMD, AT&T, CIRRUS LOGIC, FLORIDA STATE UNIVERSITY, IIT, INTEL, LAWRENCE LAB, NASA, NATIONAL SEMICONDUCTOR, PG&E, QUANTUM CORP, SEAGATE TECHNOLOGY, SIERRA SEMICONDUCTOR, STANFORD UNIVERSITY, SUN MICROSYSTEMS, U C BERKELEY, YALE UNIVERSITY, AND MANY, MANY MORE.

MONTHLY SPECIALS		386-33 64K Cache	386-40 64K Cache	486SX-20C ISA	486-25C ISA	486-33C ISA	486-50C ISA	486-33C EISA
MOTHERBOARD WITH CPU		$252	$262	$312	$472	$522	$892	$992
BASIC SYSTEM	**Basic System Configuration:**	*Motherboard and CPU *1:1 2HD/2FD Controller *1.2MB or 1.44MB Floppy Drive				*1MB RAM *Enhanced Case W/Power Supply *101-Key Enhanced Keyboard		
		$412	**$422**	**$462**	**$642**	**$692**	**$1,062**	**$1,192**
BASIC SYSTEM +VGA COLOR MONITOR +VGA CARD (256KB)	+40 MB +80 MB +120MB	$836 $920 $970	$846 $930 $980	$886 $970 $1,020	$1,066 $1,150 $1,200	$1,116 $1,200 $1,250	$1,486 $1,570 $1,620	$1,616 $1,700 $1,750
BASIC SYSTEM +SVGA MONITOR +SVGA CARD (512KB)	+40 MB +80 MB +120MB	$876 $960 $1,010	$886 $970 $1,020	$926 $1,010 $1,060	$1,106 $1,190 $1,240	$1,156 $1,240 $1,290	$1,526 $1,610 $1,660	$1,656 $1,740 $1,790
BASIC SYSTEM W/4MB 1.2MB & 1.44MB FDD +SVGA MONITOR (.28) +SVGA CARD (1MB)	+80 MB +120MB +200MB	$1,210 $1,260 $1,500	$1,220 $1,270 $1,510	$1,260 $1,310 $1,550	$1,440 $1,490 $1,730	$1,490 $1,540 $1,780	$1,860 $1,910 $2,150	$1.990 $2,040 $2,280
BASIC SYSTEM W/4MB +1.2MB & 1.44MB FDD +NON-INTERLACED MONITOR (.28) +ORCHID HI-COLOR 1MB	+80 MB +120MB +200MB	$1,366 $1,416 $1,656	$1,376 $1,426 $1,666	$1,416 $1,466 $1,706	$1,596 $1,646 $1,886	$1,646 $1,696 $1,936	$2,016 $2,066 $2,306	$2,146 $2,196 $2,436
BASIC SYSTEM W/4MB 1.2MB & 1.44MB FDD +SONY 1304S MONITOR +DIAMOND STEALTH VRAM	+80 MB +120MB +200MB	$1,666 $1,716 $1,956	$1,676 $1,726 $1,966	$1,716 $1,766 $2,006	$1,896 $1,946 $2,186	$1,946 $1,996 $2,236	$2,316 $2,366 $2,606	$2,446 $2,496 $2,736

* VIDEO OPTIONS *

12"/14" Mono monitor w/ MGP card	$87/$107
14" VGA monitor w/ 16-bit VGA card	$232
14" SVGA Monitor with 512k card	$270
Oak VGA-256k (800*600, 16-bit)	$36
Oak VGA-512k (1024*768,16-bit)	$46
Trident 1MB (1024*768*256)	$72
Video 7 1024i w/ 512KB	$162
Video 7 VRAM II w/ 1MB	$328
Diamond Speed Star Plus w/ 1MB	$138
Diamond Speed Star w/ Hi-color	$152
Diamond Stealth VRAM	$254
Diamond Hi-Color & SONY 1304S	$704
Diamond Hi-Color & NEC 3FGX	$818
Diamond Stealth & Nanao 9080i	$1,234
Orchid IIs /Fahrenheit	$BEST
Nanao 9070U (16", 1024*768, 0.28)	$838
Nanao 9080i (16", 1280*1024, 0.28)	$978
Nanao F550i (17", 1280*1024, 0.28)	$1,198
NEC 3FGX (15", 1024*768, 0.28)	$664
NEC 4FG (15", 1024*768, 0.28)	$758
NEC 4DS (16", 1024*768, 0.28)	$944
NEC 5FG (17", 1280*1024,0.28)	$1,344
Sony 1304S (14", 1024*768, 0.25)	$539
Standard VGA (640*480)monitor 0.51	$196
Super VGA(1024*768)monitor 0.39/0.28	$224/$272
Super VGA non-interlaced Monitor 0.28	$326

* NEW HARD DRIVES *

40mb/28mb (IDE)	$194
52mb/19ms (IDE)	$214
80mb/18ms (IDE)	$278
100mb/18ms (IDE)	$298
120mb/16ms (IDE)	$328
130mb/15ms (IDE)	$338
200mb/16ms (IDE)	$568
200mb/16ms (SCSI)	$568
240mb/15ms (IDE)	$588
340mb/15ms (IDE)	$858
676mb/16ms (SCSI)	$1274

* PRINTERS *

Citizen 200GX (9-pin)	$154
Citizen GSX-130 (24-pin)	$254
Citizen GSX-140 Plus (24-pin)	$318
Citizen GSX-145 (24-pin)	$388
Color option for Citizen printer	$48/$68
Panasonic KX-P1180/1123	$152/$198
Panasonic KX-P1124i/1624	$282/$348

* KEYBOARD *

101-key Enhanced Keyboard	$22
Maxiswitch/Keytronics	$32/$36
Focus 2001/8001/5001	$42/$62/$72
Omnikey 101/102/Ultra	$72/$72/$102

* MATH COPROCESSOR *

AMD 80287-10	$44
Intel 387SX-16 / 387SX-20	$134/$144
Intel 387DX-33 / 25 /20 /16	$194

* Hard/Floppy Drive Adapter *

IDE 2FD/2HD	$13
IDE 2FD/2HD w/2S/1P/1G	$24
MFM 2FD/2HD	$38
Bustek SCSI (EISA)	$394
Ultrastor ESDI w/32k cache (ISA)	$164
Adaptec SCSI 1542KB w/Kit (ISA)	$268
Ultrastor SCSI 24F/24C (EISA)	$484/$684
Ultrastor ESDI 22F/22C (EISA)	$484/$684

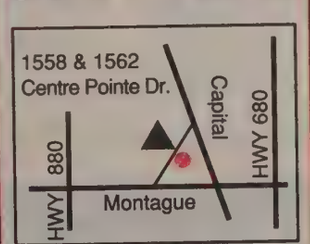
* MISCELLANEOUS *

AT I/O (2S/1P/1G)	$11
Serial card/Parallel card/Game card	$11
Windows 3.0 with Mouse	$62
Internal 2400 baud Modem	$40
Fax Modem (9600 Fax, 2400 Modem)	$72
3-button Mouse	$14
Logitech Mouseman serial (400 dpi)	$62
Logitech Mouseman bus (400 dpi)	$68
Colorado Tape Back-up 120MB/250MB	$198/$264

HI-TECH USA

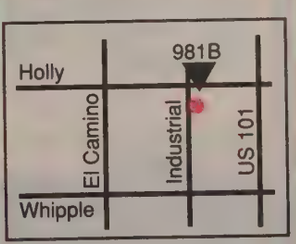
Hours: M-F: 8AM-6PM
SAT: 10AM-4PM

SOUTH BAY



1558 & 1562 Centre Pointe Dr.
Milpitas, CA 95035
Phone: **(408) 262-8688**

PENINSULA



981B Industrial Road
San Carlos, CA 94070
Phone: **(415) 508-8688**

MACINTOSH® HIGH PERFORMANCE

Classic® Macintosh® Products

Apple® Macintosh® Classic® 4/40

The Apple® Macintosh® Classic® is the most affordable Macintosh and the ideal entry level personal computer for students and/or small businesses. 4 MB RAM 40 MB HD

1099.

Apple® Macintosh® Classic®II 4/40

Combines performance and affordability for the budget minded business person. Solid performance to run virtually all Macintosh compatible software. 4 MB RAM and 40 MB HDD.

1249.

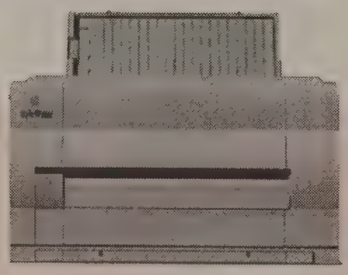
Modular

Apple® Macintosh® LC II 4/40

The just released Macintosh® LC II combines color with a virtual memory capability that lets you use more applications simultaneously. A great mix of solid performance and affordability. 4 MB Ram/ 40 MB HD. System 7 capable *Monitor extra.*

1499.

Apple® Macintosh®

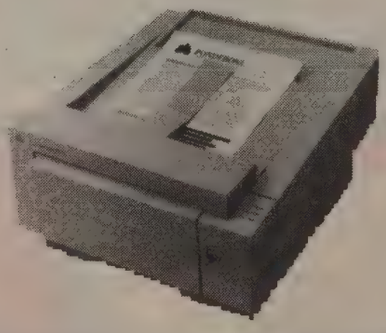


Authorized Dealer
Authorized Service

Print in Style

The Apple® StyleWriter® brings outstanding laser-like quality results, quiet operation, and space saving compact design for only a fraction of the cost of a laser printer. Compatible with all Macintosh® computers.

349.

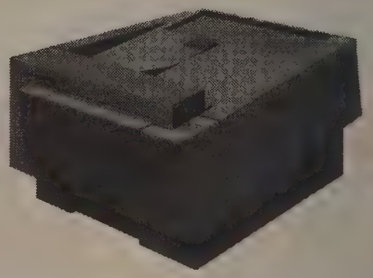


Authorized Dealer
Authorized Service

Apple® Personal LaserWriter® LS

The new personal LaserWriter® LS printer is the most affordable personal laser printer from Apple®. It's compatible with all Macintosh® computers.

849.



Apple® Personal LaserWriter® NT

The Personal LaserWriter® NT offers individuals and small workgroups affordable, high-quality PostScript® laser printing in a compact design. This printer has a built-in AppleTalk® interface for Macintosh® computers.

1395.

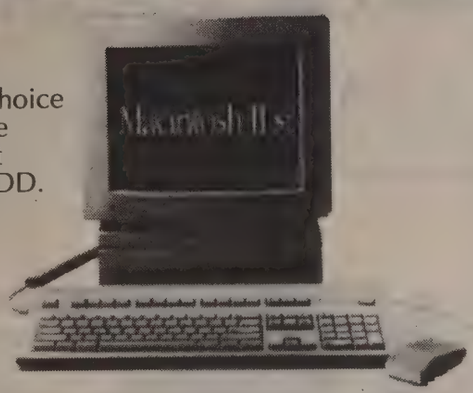
WHOLE EARTH ACCESS

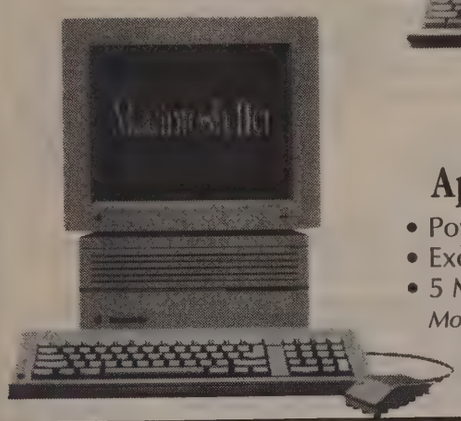
FAMILY OF PRODUCTS

Macintosh® Products

Apple® Macintosh® IIsi

This computer is an excellent choice for business, education or home users. Flexible monitor support built-in. 3 MB RAM, 40 MB HDD.
Monitor and keyboard extra.





Apple® Macintosh® IIci

- Power with room to grow
- Excellent choice for business
- 5 MB RAM

Monitor and keyboard extra.

Limited Availability

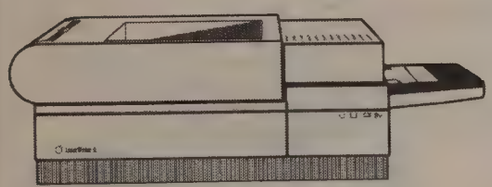
Macintosh® Quadra™

Apple® Macintosh® Quadra™ 700

- Highest performance desktop Macintosh®
- Excellent choice for business professionals
- 4 MB RAM

Monitor and keyboard extra.

Printers

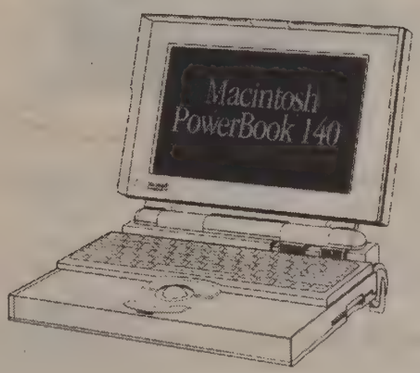


Apple® LaserWriter® IIg

- Most powerful and most capable LaserWriter®
- More than 65 levels of gray
- Adobe's PostScript® Level 2

3495.

PowerBooks



Apple® Macintosh® PowerBook™ 140 4/40

- Macintosh® power with notebook convenience
- Runs virtually all Macintosh® software
- 4 MB RAM, 40 MB hard drive

2599.

NOTICE
Due to the unparalleled demand for Apple® Macintosh® computers, we regret that availability of all Apple® Macintosh® systems is subject to change without notice.

Authorized Dealer
Authorized Service

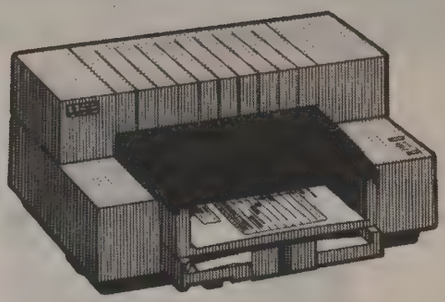
© 1991 Apple Computer, Inc.
Apple, Macintosh, LaserWriter, StyleWriter, and the Apple logo are registered trademarks of Apple Computer, Inc. Classic is a registered trademark licensed to Apple Computer, Inc. PostScript is a registered trademark of Adobe Systems, Inc. Quadra and PowerBook are trademarks of Apple Computer, Inc.

Connecting Point

BERKELEY 7th and Ashby 843-1700
SAN FRANCISCO 401 Bayshore Blvd. 285-5244
SAN RAFAEL 863 E. Francisco Blvd. 459-3533
CONCORD Willows Shopping Center 686-2270
SAN MATEO Fashion Island Shopping Center 578-9200
SAN JOSE 3530 Stevens Creek Blvd. (408) 554-1500
SACRAMENTO 3130 Arden Way (916) 489-1000

HP Leads the Revolution in Resolution

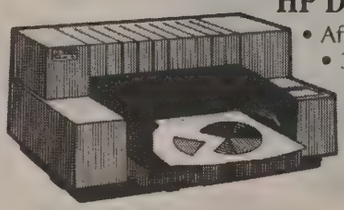
HEWLETT PACKARD



HP DeskWriter Printer

Hewlett-Packard's DeskWriter printer, now AppleTalk® compatible, brings laser-like quality to the Macintosh® line.

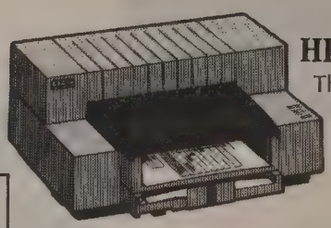
399.



HP DeskJet 500C Printer

- Affordable laser-quality printing
- 300-dpi color printing on plain and transparencies • Supports leading software applications including Windows 3.0 • 3-year limited warranty

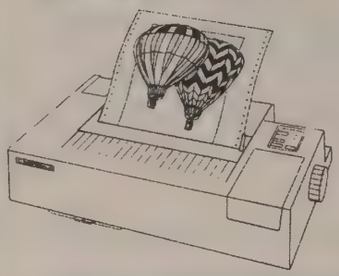
749.



HP DeskWriter C Printer

The new HP DeskWriter C adds color capacity to an already famous laser-quality black output. It's compatible with popular Macintosh® software and your budget.

749.

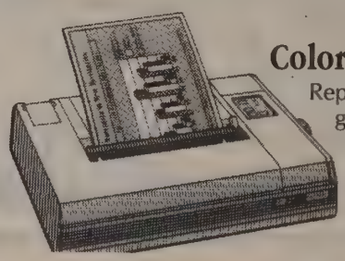


HP PaintJet Color Graphics Printer

- High quality color charts & graphics
- PC or Macintosh® compatible •

Wide range of software support.

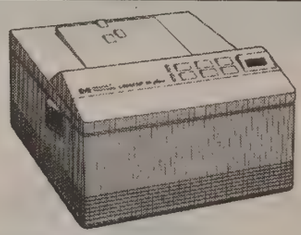
829.



Color Me Brilliant HP PaintWriter

Reports and presentations achieve their greatest impact in color produced by the HP PaintWriter printer. Prints on paper or transparency for maximum versatility. Compatible with Macintosh® color computers.

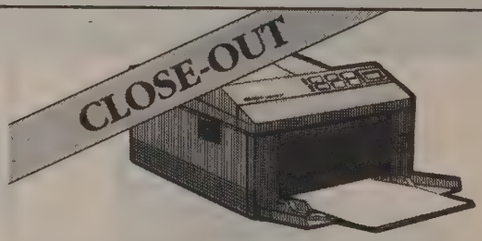
829.



HP LaserJet IIP *plus* Printer

- High-quality, 300 dpi text and graphics
- Compact, desktop size • Prints 4 pages per minute • Compatible with all major software packages • Optional 250-sheet paper cassette for dual-bin printing

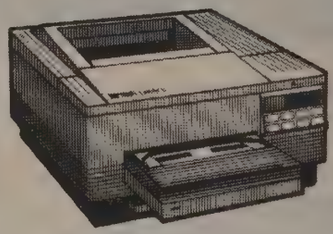
799.



HP LaserJet IIP PostScript Printer

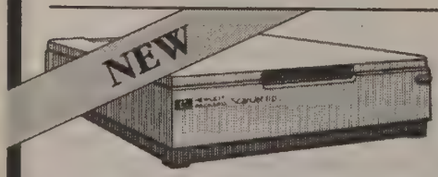
- Mac or IBM compatible • True Adobe® PostScript with 35 typefaces • Built-in Local Talk interface • Easy to use—"plug and play"
- Compact, desktop size

LIMITED TO STOCK ON HAND **1399.**



HP LaserJet III Printer

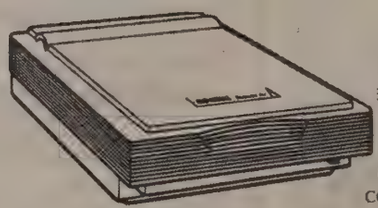
- Now Hewlett-Packard LaserJet Printers are PC or Macintosh® compatible • AppleTalk® compatibility with optional interface
- Dependable HP performance



HP ScanJet ScanJet II P

Scan images at 300dpi resolution, or scan text using software and stop typing it in. Exceptionally easy to use, and it works with most popular scanner software packages.

AT VERSION
Price includes interface **895.**



HP ScanJet IIc

he new HP ScanJet IIc gives you 256 evels of gray or 24-bit color professional quality documents. Supports IBM AT-compatible PCs, MicroChannel or Macintosh® personal computers.

Starting At **1495.**

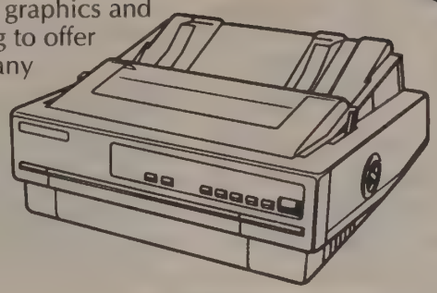
WHOLE EARTH ACCESS

EPSON®

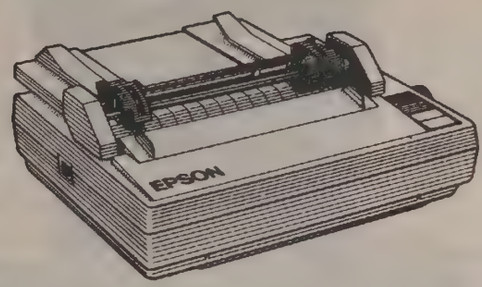
LQ-570

This new 24 pin printer utilizes scalable fonts, enhanced graphics and advanced paper handling to offer more performance than any printer in its class at an affordable price.

259.



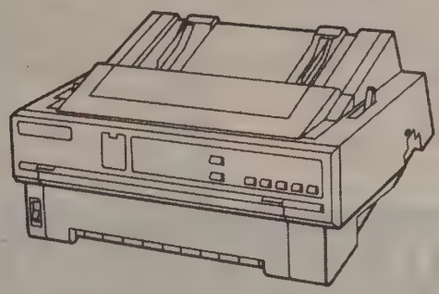
FREE Epson Approved Parana Ribbon With Every Printer Purchase



LQ-870

This new 24 pin printer is a major step forward in printer technology with high speed, and high performance that sets a new industry standard for quality with scalable fonts.

469.



LQ-1170 Wide Carriage Model.....615.

LX-810

The LX-810 gives you high-resolution graphics, 200 character per second in the superdraft mode, and 30 cps in near letter quality. SmartPark prevents paper loading hassles.

159.

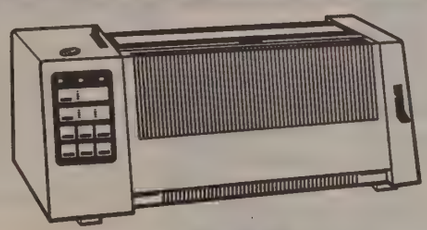
NEW PRINTERS FROM IBM®

IBM® PPSII 2380

IBM introduces 2 new 9 pin printers that can print crisp, six -part forms and thick paper stock with no problem using straight paper path technology. Solid and reliable, these printers perform flawlessly.

2380 Narrow Carriage .....315.

2381Wide Carriage.....455.

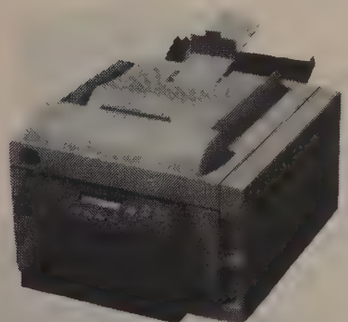


IBM® PPSII 2390

IBM introduces 2 new 24 pin printers for letter quality printing at high speed. Durable and reliable, these printers feature a straight through paper path with multiple feed options.

2390 Narrow Carriage .....325.

2391Wide Carriage.....465.



IBM® LaserPrinter 6

6 pages per minute

Model 4029020

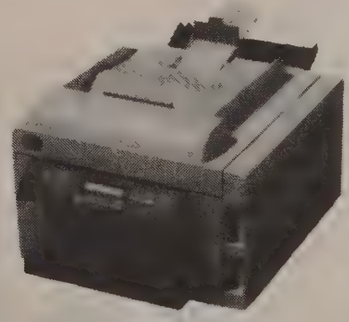
1485.

IBM Business Partner

Authorized Personal Computer Dealer

IBM® LaserPrinters 6 & 10

At 6 or 10 pages per minute with Print Quality Enhancement and Scalable Fonts, these printers outperform the rest. Paper handling includes a 200 sheet input tray with optional 500 sheet drawer and 75 piece envelope feeder. When you add the optional PostScript® and 4 MB of memory this printer provides the most affordable 600 x 600 dots per inch technology available today. HP PCL4 compatible and optional PCL5.



IBM® LaserPrinter 10

10 pages per minute

Model 4029030

1785.

® IBM is a registered trademark of International Business Machines Corporation in the U.S. and/or other countries and used under license. IBM printers are designed and distributed by lexmark International, Inc. under license from International Business Machines Corporation. © 1991 Lexmark International, Inc.

Connecting Point

BERKELEY 7th and Ashby 843-1700

SAN FRANCISCO 401 Bayshore Blvd. 285-5244

SAN RAFAEL 863 E. Francisco Blvd. 459-3533

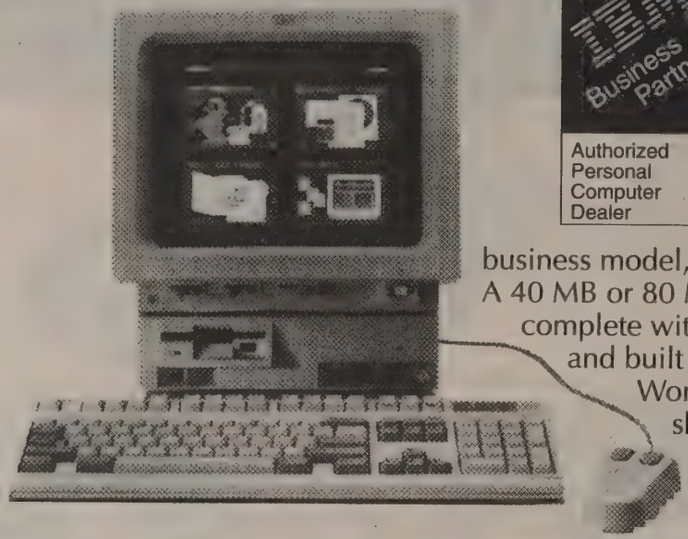
CONCORD Willows Shopping Center 686-2270

SAN MATEO Fashion Island Shopping Center 578-9200

SAN JOSE 3530 Stevens Creek Blvd. (408) 554-1500

SACRAMENTO 3130 Arden Way (916) 489-1000

BRING IT ALL BACK HOME



Authorized Personal Computer Dealer

IBM® PS/1™ 386SX

The new IBM PS/1 386 SX achieves the exceptional. A home machine with the power of a business model, this computer operates at 16 mhz with 2 MB's of RAM. A 40 MB or 80 MB hard drive stores all your essential data. Comes complete with VGA PhotoGraphic™ color display, keyboard, mouse and built in 2400b modem. Plus you get IBM DOS, Microsoft Works® and 3 months FREE Prodigy for on line home shopping, banking, travel arrangements and more.

LIMITED SUPPLY

NEW LOW PRICES ON ALL IBM

Authorized Personal Computer Dealer

Ask About IBM's New 30 Day Money Back Guarentee

IBM® PS/2® L40sx

Full featured, fast and flexible, the L40sx is IBM's new no compromise notebook PC. 2 MB of RAM expandable to 18 MB , VGA display, 20 Mhz 80386sx processor and 60 MB hard drive make this system an outstanding choice for the business traveler.

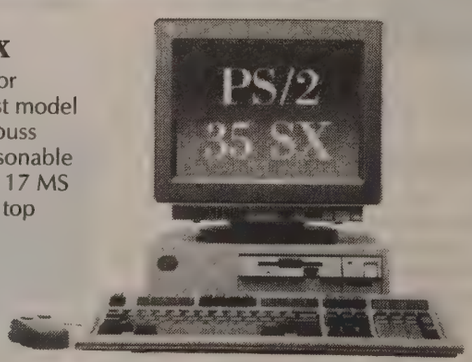
2295.

IBM® PS/2® 35sx

Based on an 80386sx processor operating at 20 Mhz, this latest model IBM PC offers the classic ISA buss allowing easy upgrades at reasonable cost. 2 MB of RAM and a fast 17 MS 40 MB IBM hard drive insure top performance. VGA on board.

Monitor extra.

1395.

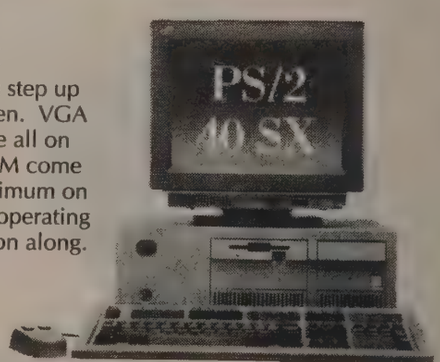


IBM® PS/2® 40sx

For more expansion capabilities step up to the PS/2 40sx with 5 slots open. VGA hard drive controller and I/O are all on the motherboard. 2 MB's of RAM come standard with up to 16 MB maximum on the system board. An 80386sx operating at 20 Mhz speeds every operation along.

Monitor extra.

1495.



IBM, PS/2 and OS/2 are registered trademarks and PS/1, Personal System/1, Photo Graphics, Selectric Touch and Micro Channel are trademarks of International Business Machines Corporation. Microsoft is a registered trademark of Microsoft Corporation. Prodigy is a registered service trademark of Prodigy Service Company.

WHOLE EARTH ACCESS

TOSHIBA *Quality Dealer*

We feature APRICORN MEMORY

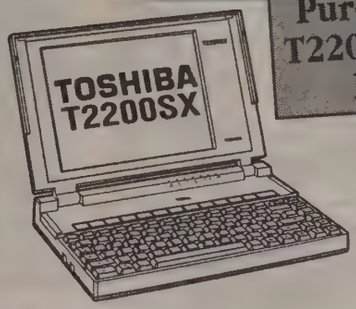
APRICORN

TOSHIBA NOTEBOOKS

Purchase the Award Winning Toshiba T2200SX Notebook and get a Megahertz Pocket Fax/Modem for only $99.*

New LOWER Price!

MX MACRONIX, INC. Now featuring MACRONIX Fax Modems for TOSHIBA



Toshiba T2200SX/40

Introducing the T2200SX—state-of-the-art features in a 5.5 pound notebook format! • 20 MHz, 386™SX processor • 40 MB or 60 MB hard drive • 1.44 MB diskette drive • 2 MB RAM expandable to 10 MB • VGA display with 16 gray scales

2399.

i386 is a trademark of Intel Corporation. * Plus applicable state sales tax and $7.50 for shipping and handling. See stores for details.

Toshiba T2000SX/40

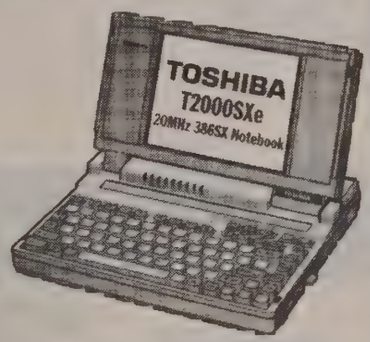
- Toshiba's most powerful notebook computer
- High performance—386SX™ processor
- Super ergonomics—only 6.9 lbs.

2199.

Toshiba T2000SXe/60

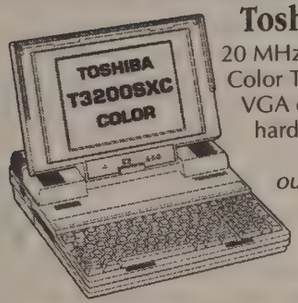
The Toshiba T2000SXe/60 offers advanced features required by business and professional power users. Time now to replace your desktop.

2699.



All Toshiba computers subject to availability.

TOSHIBA DESKTOP REPLACEMENTS



Toshiba T3200SXC

20 MHz 80386™SX CPU. Color TFT-LCD active matrix VGA display. 120 MB hard disk drive.

See one in our Berkeley Store.

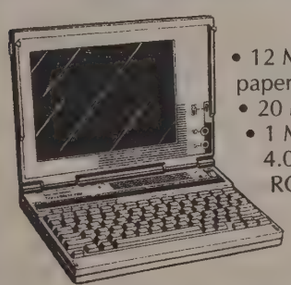
LIMITED STOCK

TOSHIBA T6400DX/SX

• Choice of 33 MHZ DX OR 25 MHZ SX i486™ CPU • 1 Full Length 16-bit ISA expansion slot • 16 gray scales VGA gas-plasma display • 4MB RAM, expandable to 20MB • 200MB or 120MB hard disk drive • Ergonomically-designed 101-key detachable keyboard

LIMITED STOCK

TEXAS INSTRUMENTS



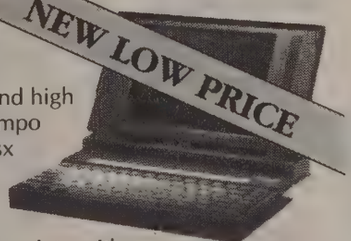
TM2000

• 12 Mhz 80286 • VGA paper-white LCD display • 20 MB hard drive • 1 MB RAM • DOS 4.01 and laplink in ROM

999.

EVEREX

NEW LOW PRICE



"Deskless" Computing

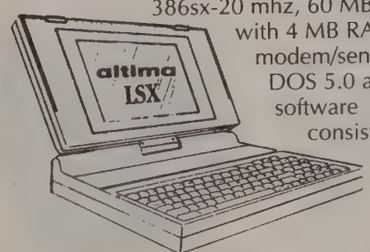
Low in weight and high in power the Tempo LX 20 Mhz 386sx notebook frees you from the bonds of your desk. Comes complete with VGA graphics, 1 MB RAM expandable to 5 MBs and a 60 MB hard drive.

1899.

altima LSX

Award Winning

386sx-20 mhz, 60 MB HD with 4 MB RAM, 2400b modem/send fax, MS-DOS 5.0 and special software collection consisting of six titles.



1999.

Connecting Point

BERKELEY 7th and Ashby 843-1700

SAN FRANCISCO 401 Bayshore Blvd. 285-5244

SAN RAFAEL 863 E. Francisco Blvd. 459-3533

CONCORD Willows Shopping Center 686-2270

SAN MATEO Fashion Island Shopping Center 578-9200

SAN JOSE 3530 Stevens Creek Blvd. (408) 554-1500

SACRAMENTO 3130 Arden Way (916) 489-1000

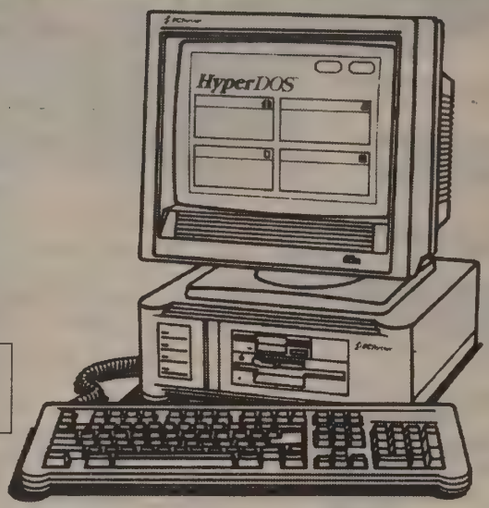
COMPUTER SYSTEMS

PCPartner XI™
By Leading Technology Inc.

386SX

• 16 MHz, 80386SX Processor • 1 MB-4 MB Ram capability • 40 MB Hard Drive • 5.25" and 3.5 Floppy Disk Drives • 1 Parallel Port, 2 seriel Ports • 4 ISA Expansion Slots • VGA Video Adapte • On-Site, In-Home/In-Office warranty service included
Monitor Extra

799.



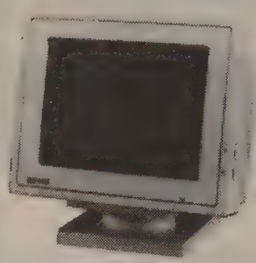
PCPartner QI™
By Leading Technology Inc.

486DX

• 33 MHz, 80486DX Processor • 2 MB-12 MB Ram capability • 100 MB Hard Drive • 5.25" and 3.5 Floppy Disk Drives • 3 Exposed Device Bays • 6 ISA Expansion Slots • VGA Video Adapte • On-Site, In-Home/In-Office warranty service included
Monitor Extra

1995.

MONITORS



By Leading Technology Inc.

Leading Technology 1480A

• 14" amber flat screen 720h x 350v with tilt and swivel.

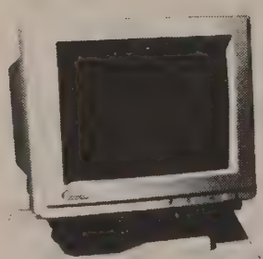
Limited Quantities **109.**

PCPartner™
By Leading Technology Inc.

1420S/520S

• 14" Super VGA color • .28 dot pitch • Includes tilt & swivel base • 1024 x 768

349.



By Leading Technology Inc.

Leading Technology 1428V

• 14" non-glare screen • 1024h x 786v • Tilt and Swivel • VGA cable

Limited Quantities **309.**

SIGMA DESIGNS

Sigma VGA Legend II

• 1024 x 768 • 32,000 colors • Inter-laced or non-interlaced • No switches or jumpers • 1 MB video memory • Exceeds European ergonomic standards for flicker-free displays • 5 year warranty

259.

SONY

Sony 1320 VGA

• VGA color monitor • Analog input • .25mm aperture grid

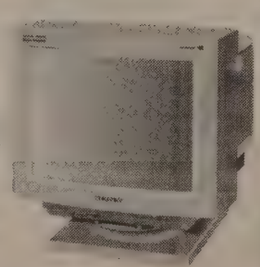
399.

SONY

Picture Perfect

Ideas spring to life in sharp vivid color on this advanced Sony monitor. Sony combines non-interlaced technology with a super fine pitch grille to achieve sharper images without flicker. Compatible with Macintosh
#CPD-1304S

579.



Intel Co-Processors

80287XLT	89.
80287XL	89.
80387SX-16	115.
80387SX-20	129.
80387DX 16-33Mhz	195.

Maxtor Hard Drives

60MB SCSI 17ms	249.
80MB IDE/SCSI 19ms	299./309.
120MB IDE/SCSI 15ms	359./375.
340MB IDE 13ms	975.
1.2GB SCSI 13ms	1999.

Seagate Hard Drives

43MB IDE 16ms	189.
130MB IDE 16ms	369.
210MB IDE 16ms	599.
492MB IDE 14ms	1299.

WHOLE EARTH ACCESS

SOFTWARE

The Learning Company®

Super Solvers Spellbound

29.

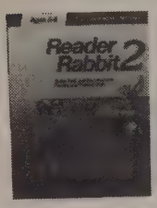
Operation Neptune

35.

The Writing Center

35.

Reader Rabbit 2



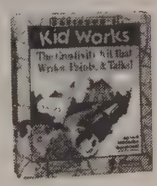
35.

Davidson.

Teaching Tools From Teachers

Math Blaster Mystery

29.



Kids Works

35.

Math Blaster Plus

35.

Headline Harry

35.

HEWLETT PACKARD

HP 95LX — the one PC that's with you ALL the time

"let's you carry DOS in your pocket... a class act and priced right" — *PC Magazine*

"brightest star in the palmtop pantheon" — *U.S. News & World Report*

"offers a surprising number of functions in such a small package" — *Nation's Business*

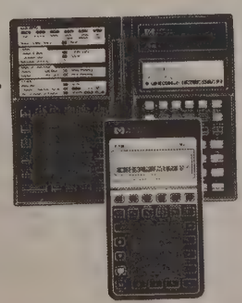
"a serious alternative to expensive laptops" — *PC/Computing*

Discover it for yourself— the award-winning HP 95LX Palmtop PC!

HEWLETT PACKARD

HP calculators- the best for your success.

- Complete set of financial functions
- Menus and softkeys to guide you
- Algebraic or RPN entry



HP 17BII Financial Calculator **99.**

HP 19BII Financial Calculator **149.**

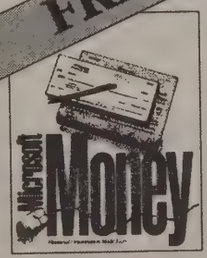
Microsoft®

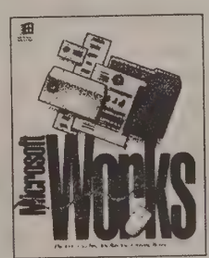
Software for people, not computers

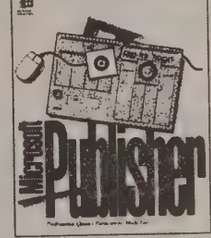
Using your PC has never been easier. *New!* Microsoft® Windows™ version 3.1.

89.

FREE*







* Free w/ purchase of MicroSoft Works for Windows or Publisher for Windows. See stores for coupons and program details

139. **139.**

Connecting Point

BERKELEY 7th and Ashby 843-1760

SAN FRANCISCO 401 Bayshore Blvd. 285-5244

SAN RAFAEL 863 E. Francisco Blvd. 459-3533

CONCORD Willows Shopping Center 686-2270

SAN MATEO Fashion Island Shopping Center 578-9200

SAN JOSE 3530 Stevens Creek Blvd. (408) 554-1500

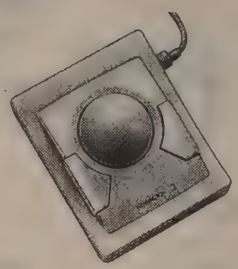
SACRAMENTO 3130 Arden Way (916) 489-1000

ACCESSORIES

KENSINGTON

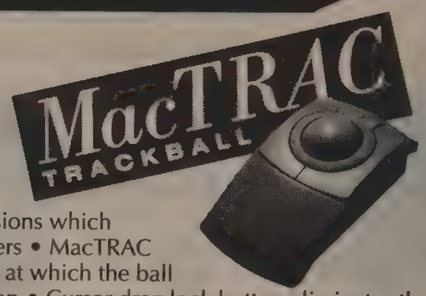
Expert Mouse Gives You Everything You Need

•Serial version for IBM PC compatibles



129.

Point for Point, MacTRAC is Today's Best Value



•MacTRAC is available in versions which support all Macintosh computers • MacTRAC constantly monitors the speed at which the ball is moving • Stationary operation • Cursor drag lock button eliminates the need to hold down a button to drag the cursor • Allows optimum performance for either right or left handed users.

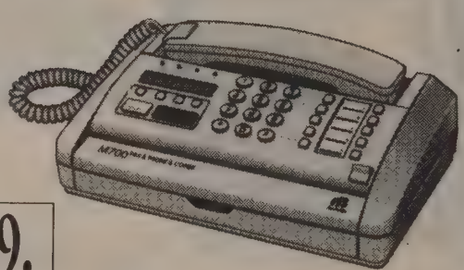
MAC Version 79. PC Serial Version 99. PC Bus Version 109.

HOME/OFFICE

MURATA

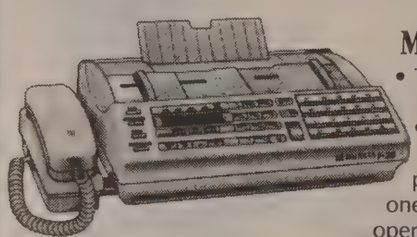
The First True Home Fax

Murata built the M-700 with the right size and shape to be a welcome addition in any home. It's a fully functional fax machine and high quality telephone that can co-exist on a single telephone line. It is scarcely bigger that a telephone, only weighs 5.5 pounds, yet can send handwriting, or photos, across the country at 19 seconds a page. You can hook up your answering to round out this "home communications center". If you have been thinking about bringing the fax age home, the M-700 is the logical choice. The M-700 for the home.



339.

Multitasking Business Fax with Cutter and Memory



- The Murata F-38 delivers high volume fax features in an affordable, compact and easy to use productivity tool.
- Sixteen pages of document memory eases sequential fax broadcasting up to 70 locations and saves valuable information if you run out of paper. • Multitasking program memory saves money and time enabling one person's fax to be entered while anothers is sent. Five delayed operations for after hours faxing reduces long distance bills.
- Generates activity journals automatically every 25 transactions plus confirmation reports on each fax. The F-38 provides vital documentation for managing fax usage.
- You can connect your answering machine to your fax because the F-38 pre-recorded voice prompt assists callers in faxing and message taking.

699.

OUR BERKELEY TRAINING CENTER OFFERS MANY CLASSES

INCLUDING:

- MICROSOFT WORD
- MICROSOFT EXCEL
- MICROSOFT WORKS
- *FREE* INTRO TO MAC AND DOS

FOR INFORMATION AND REGISTRATION CALL

(510) 843-1700 ext. 310

BERKELEY
7th & Ashby
843-1700
Mon.- Wed. 10 a.m. - 6 p.m.
Thurs. & Fri. 10 a.m. - 8 p.m.
Sat. & Sun. 10 a.m. - 6 p.m.

CONCORD
Willows Shopping Center
686-2270
Mon. - Fri. 10 a.m. - 9 p.m.
Sat. & Sun. 10 a.m. - 6 p.m.

SAN MATEO
Fashion Island Shopping Center
578-9200
Mon. - Fri. 10 a.m. - 9 p.m.
Sat. 10 a.m. - 6 p.m.
Sun. 11 a.m. - 6 p.m.

SAN RAFAEL
863 E.Francisco Blvd.
459-3533
Mon. - Wed. 10 a.m. - 6 p.m.
Thurs. & Fri. 10 a.m. - 8 p.m.
Sat. & Sun. 10 a.m. - 6 p.m.

SAN FRANCISCO
401 Bayshore Blvd.
285-5244
Mon. - Wed. 10 a.m. - 6 p.m.
Thurs. & Fri. 10 a.m. - 8 p.m.
Sat. & Sun. 10 a.m. - 6 p.m.

SAN JOSE
3530 Stevens Creek Blvd.
(408) 554-1500
Mon. - Fri. 10 a.m. - 6 p.m.
Sat. 10 a.m. -5 p.m.

SACRAMENTO
3130 Arden Way
(916) 489-1000
Mon. - Fri. 10 a.m. - 9 p.m.
Sat. - Sun. 10 a.m. - 6 p.m.

CORPORATE SALES
(510) 204-8800

Errors subject to correction

WHOLE EARTH ACCESS

Microsoft's BASIC Strategy

BY BIRRELL WALSH

Microsoft is following an interesting strategy in the computer language market. While other vendors are focussing on the upper end, Microsoft has invested a lot in languages for the occasional user.

Microsoft has reentered the market for beginners and occasional programmers with a whole bevy of programs. They have re-created BASIC, the Beginners' All-Purpose Symbolic Instruction Code, in which a whole generation of microcomputer programmers worked ten years ago.

They have actually created several BASICS, all of which have transcended the limits of the BASIC languages of the early '80s to become very effective programming tools.

THE CHARM OF BASIC

BASIC is a simple language to use, and one of the most self-explanatory. Compare these programs in C, Pascal, and BASIC. They all do the same thing.

C Version

```
#include <stdio.h>

char name[20];

main()
  {
        printf("What is your name?\n");
        scanf("%s", name);
        printf("Hello, %s", name);
  }
```

Pascal Version

```
var
   name string(20);

begin
   writeln('What is your name?');
   readln(name);
   writeln('Hello, ', name);
end.
```

BASIC Version

```
LINE INPUT "What is your name?"; name$
PRINT "Hello, "; name$
```

Copyright© 1992 by Birrell Walsh. All rights reserved.

The BASIC version of the program is two lines long, instead of seven or eight. The words are self-explanatory. That makes programs self-documenting—almost anyone can guess what your intention is when you write a program in BASIC. Programs in this language are easy to write and relatively easy to understand.

So why doesn't everybody use BASIC?

A DIGRESSION INTO HISTORY

Vendors many years ago began selling BASIC languages for various computers. Many computer programmers began by writing in BASIC. Each edition of DOS that Microsoft released had a version of BASIC included.

The older BASIC always created problems for programmers. Variable names could only be two characters long. It used line numbers, and the programmer had to direct the program to jump to other lines. The jumps often made a tangle—the "spaghetti code" programming teachers warn us against. The language did not have the control structures that newer languages had. It was also difficult to extend. Programmers in Pascal could write procedures and functions, then use them just like language keywords.

The world of programming moved on when Borland released Turbo Pascal for DOS. All computers must translate programs into machine language before they can be run. They can do it line-by-line, using an interpreter, or they can convert the whole program at once with a compiler. Because Turbo Pascal programs were compiled, they were fast and could be used without a BASIC interpreter. The programmers who had worked with BASIC largely deserted it to migrate to Turbo Pascal, and later to versions of C. BASIC fell into the shadows.

Turbo Pascal began as a small program that was cheap and relatively simple. It was almost as easy to use as BASIC. As it has evolved, however, it has become a much more powerful, complex, and expensive language. It evolved to serve the professional programmer who must be able to make the computer do absolutely anything. In serving the professional, Turbo Pascal has left the beginner behind. C has never been good for the beginner.

In addition to beginners and professionals, there is a third group that writes programs. They are skillful occasional programmers. They write utilities for the office, or small applications for special needs. They save their business a lot of money with their skills. For some of them programming is a hobby as well. BASIC was their original language, easy to use and ready to hand. Some of them migrated to other languages; many simply stopped programming.

Beginners and occasional programmers were left behind by the evolution of computer languages. Microsoft is now aggressively going after that market.

QBASIC (BUNDLED WITH DOS 5.0)

The Microsoft tradition of including a free version of BASIC with DOS continues. But the new version is a powerful standalone language.

Beginners and occasional programmers were left behind by the evolution of computer languages. In serving the professional, Turbo Pascal has left the beginner behind. C has never been good for the beginner.

As soon as you run QBASIC, you know this is not the BASIC of yore. There is a menu bar along the top. There is an editor, with all the simple editing functions (the EDIT function in DOS 5.0 is actually the same editor.) There is a context-sensitive help system.

QBASIC programs have also acquired fully structured programming. Line Numbers are gone! QBASIC now has functions and procedures (still called subroutines). In fact, Microsoft has adopted a convention I haven't seen in any other language: subroutines and functions appear in editing windows of their

own. You open an outline of programs and their subroutines, and select the function or subroutine that you wish to edit. A dialogue box asks you what you want to call the new subprogram, and you name it. You then enter an editing window that is reserved for that function or subroutine. After editing it, you can call it from the main program or from other functions and subroutines as if it were one of the language's keywords.

Without line numbers, and with functions and subroutines, QBASIC programming is not the mess of "GOSUB 3159" jumps that produced the spaghetti code of the past. It is easy to write simple and intelligible programs in this language.

Without line numbers, and with functions and subroutines, QBASIC programming is not the mess of "GOSUB 3159" jumps that produced the spaghetti code of the past. It is easy to write simple and intelligible programs in this language.

All the standard control structures, including CASE, are available in QBASIC.

QBASIC is capable of running most programs written in BASICA or GWBASIC, the languages that appeared with earlier versions of DOS. If you have always been a BASIC programmer, your prior work is largely compatible.

So what *don't* you get with the bundled QBASIC of DOS 5? Documentation, for one thing. The DOS 5 books include essentially no information about how to use QBASIC. The aftermarket book people have been quick to fill the gap. I used *QBASIC Made Easy* by Don Inman and Bob Albrecht (Osborne/McGraw-Hill, $19.95). It assumes you know nothing about programming and leads you through QBASIC step by step.

You also do not get a compiler. Despite speed vastly improved over the BASICs of yesteryear, QBASIC is still an interpreter. That means that your programs require QBASIC to run—and that you cannot distribute them as a finished, compiled .EXE file.

QUICKBASIC

QuickBASIC is the parent of QBASIC. All the features which exist in the language bundled with DOS 5 were originally developed for QuickBASIC. But the $99 QuickBASIC is more than the bundled version of the language.

First, it is a fully compiled language. You can make (and distribute without royalties) a complete .EXE file that runs like any other application. The compiler is an "incremental compiler" which shortens the usual time for a compilation during rewriting.

Second, you get documentation with the program. The Microsoft manuals are excellent—you can learn the language without having to buy a third-party book.

Third, the sample programs show you how to program with working examples. My favorite is a program that compares the speed of various sorting algorithms, and demonstrates each by sorting bars of different lengths.

Fourth, you can build libraries of QuickBASIC functions for your own use or distribution, without having to distribute the source code.

Fifth, a growing number of third-party vendors provide packages for QuickBASIC. I would guess it to be the third most commonly supported language for the DOS world, after C and Pascal.

Combined with the strengths that are already in QBASIC, these features allow you to use QuickBASIC for exactly the niche Microsoft intended. It is the ideal language to design a utility or to build a DOS "data-massager".

Visual Basic is almost object-oriented. All of the entities on the screen act like objects in an object-oriented language. The difference is that objects cannot be used as prototypes to make descendants, and you cannot design new objects. All the Visual Basic objects are mules.

This is not a trivial position in the market. Consider how much of the time a business computer specialist spends writing small programs to convert from one file format to another. Or building intelligent menu systems. Or developing security systems that are not so widely distributed as to be useless. Scientists and researchers constantly write programs to reorganize data or perform simple calculations that are awkward (although possible) in off-the-shelf packages.

I found that in the weeks after QuickBASIC arrived, I started and finished four little utilities that had been on my to-do list for months. I could have written them in C or Pascal, but in QuickBASIC they were quickly and easily done. They moved from the wish-list to reality.

QuickBASIC is also ideal for the beginning programmer who must get up to speed quickly in a language. It is not unusual to discover that you must learn to program in order to accomplish some goal. If you have no desire to become a professional programmer, why put up with C's idiosyncrasies? There is no particular use in object-oriented programming if you will not be reusing code. For the one-time programmer, QuickBASIC is sturdy and easy to learn. ($99 list)

VISUAL BASIC

Some time ago the technical columnist Steve Gibson startled *InfoWorld* readers with his wild enthusiasm for Microsoft's latest version of BASIC. It would change the world of programming, he wrote, and make Windows accessible to a mass audience.

Why the enthusiasm from an ordinarily restrained computer maven?

Windows programming has justifiably gotten the reputation of being painful and slow. Programmers must learn to handle not just the musical instrument of a single program, but the symphonic interaction with other programs that takes place under Windows. Events can interrupt a Windows program in mid-process. The screen can be shared by many programs at once. In addition to what your program does, attention must be paid to how it appears on the screen and how it interacts with other applications.

Microsoft has combined the virtues of QuickBASIC with an extraordinarily easy-to-use interface designer for Windows. That is the good news. The bad news is that even BASIC cannot make Windows easy. One interesting thing is that they have dropped the custom of writing BASIC in all uppercase letters. The new language is called Visual Basic.

The good news: Microsoft has set a standard in interface design. When you open Visual Basic, you are immediately given an open "form" and a palette of tools.

"Forms" are what the end-user will look at. They are the windows that open when you first start an application. On a form there may be smaller "controls": windows, text-boxes, check-boxes, and buttons. The "toolbox" is a palette of tools which allow you to design, reshape, and set properties of various controls. The properties are the many characteristics which determine how the controls will work at run-time. Among them are location,

Continued on page 252

Prestige proudly presents its line of High Performance Systems for 1992

Compare **power**, compare **performance** and then – compare the **price!**

Power, performance and price aren't the only reasons to buy your next system from Prestige. Here are others:

Prestige sales managers are courteous, knowlegable professionals. You'll never experience high pressure sales techniques and they can help you custom configure any system to meet your specific needs.

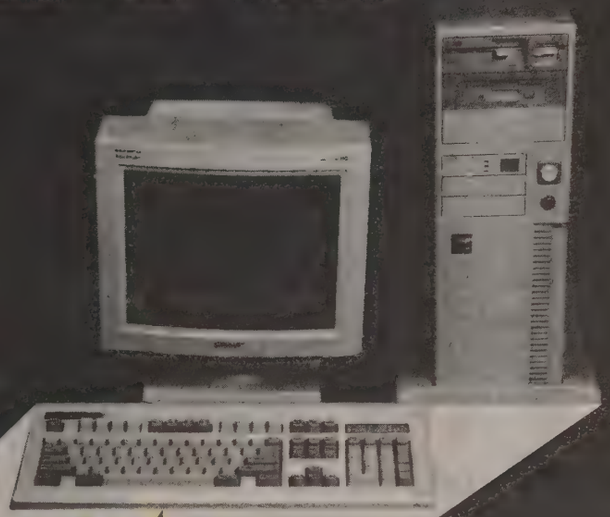
Prestige technical support people are applications specialists who speak your language.

Prestige incorporates TEAC, Conner, Maxtor, CNT, Intel, AMI and other proven manufacturers components into every system.

Prestige systems are delivered with a 1 year parts and labor warranty.

When you compare power, performance, product, price and even more important, people – **Prestige is the place to buy!** It's no wonder Prestige has enjoyed unparalleled growth over the last 6 years.

Come visit our convenient Steven's Creek location – today!



486-33/40MHZ ISA
64K/128K External Cache
1 MB Memory
512K SVGA Card
105 MB Hard Drive
$1368/1499

386DX-DX33/40MHZ
64K External Cache
1MB Memory
512K SVGA Card
105 MB Hard Drive
$1068/1099

386DX-25
1MB Memory
512K SVGA Card
40 MB Hard Drive
$888

286-12/16 MHZ
1MB Memory
512K SVGA Card
40 MB Hard Drive
$869/889

486SX-20MHZ
8K Internal Cache
1MB Memory
512K SVGA Card
105 MB Hard Drive
$1198

386SX-16/20/25 MHZ
1MB Memory
512K SVGA Card
40MB Hard Drive
$889/919/939

ALL SYSTEMS INCLUDE:
Mother Board & CPU • 1:1 2FD 2HD IDE Controller • Enhanced case & power supply •2 Serial, 1 Parallel, 1 Game Port • 101 Enhanced Keyboard • 1.2 or 1.44 Floppy Drive

HARD DRIVES

40 MB 28MS	CALL
52MB 17MS	225
85MB 18MS	295
105MB 18MS	325
120MB 16MS	365
130MB 15MS	375
200MB 16MS	599
240MB 15MS	695
340MB 14MS ESDI SCSI	898
740MB 14MS ESDI SCSI	1495

MONITORS

Amber Monitor 12" 14"	$85 99
14" SVGA Monitor & 16 Bit Card	339
Non-Interlaced SVGA Monitor (1024 x 768.28DP)	328
NEC. 3FGX/4FG	649/795
VIEWSONIC 4 6 7 8	335 385 1195 1745

VIDEO CARDS

Oak 512K SVGA Card	$48
Trident 1MB SVGA Card	79
Tseng Lab 1MB SVGA Card	99
16 Bits SVGA (1MB) Orchid Pro IIS, SIERRA, Fahrenheit	BEST PRICE
SONY HG1304	555

FAX/MODEMS

2400 Internal Modem (NMP5)	$49
9600 FAX/2400 B Modem	89

PRINTER

PANASONIC Printer (All Models)	BEST PRICE
HP Laser Printer (All Models)	BEST PRICE

Not every brand in every system.

master charge VISA

PRESTIGE COMPUTER INC.
3248 Steven's Creek Blvd., San Jose, CA 95117
Phone: (408) 249-3398; Fax: (408) 249-3392
Hours: M-F 9:00-7:00; Saturday 9:30-7:00;
Closed Sunday

H.Co. has America's largest selection of memory!

And, we'll beat any USA advertised price. *

Laptop Memory

TOSHIBA

	Memory Added	Price
T1000SE, XE,LE & 2000SX	1MB Kit	$ 149.00
	2MB Kit	199.00
	4MB Kit	319.00
	8MB Kit	679.00
T1200XE	2MB Kit	119.00
T1600	2MB Kit	119.00
T3100SX	2MB Kit	119.00
	4MB Kit	209.00
T3100	2MB Kit	279.00
T3100e	2MB Kit	119.00
T3200/SXC	2MB Kit	119.00
	4MB Kit	209.00
T3200	2MB Kit	119.00
	4MB Kit	209.00
T3200	3MB Kit	229.00
T5100	2MB Kit	119.00
T5200, 5200C	2MB Kit	119.00
8500	8MB Kit	429.00

IBM

	Memory Added	Price
L40SX	2MB Mem.	$ 119.00
	4MB Mem.	219.00
	8MB Mem.	449.00

APPLE

	Memory Added	Price
Portable III	2MB Kit	$ 129.00
Portable386/20	1MB Kit	179.00
	4MB Exp	459.00
Portable LTE286	1MB BD	119.00
	2MB BD	149.00
	4MB BD	459.00
Portable LTE386S/20	1MB BD	179.00
	4MB BD	359.00
SLT/286	1MB BD	129.00
	4MB BD	429.00
SLT/386	1MB BD	139.00
	2MB BD	219.00
	4MB BD	399.00

NEC

	Memory Added	Price
UltraLite	1MBMD	$ 229.00
286F	4MB MD	599.00
Prospeed SX/20	1MB BD	159.00
	4MB BD	439.00
Prospeed 286	1MB BD	139.00
386SX/16	2MBBD	259.00
	4MB BD	399.00
Prospeed 386	2MB CD	259.00
	8MB CD	999.00

ZENITH

	Memory Added	Price
S.S./SX	2MB Alpha	$ 169.00
	2MB Beta	169.00
	2MB EXP	189.00
Slimsport	2MB CD	189.00
286e	4MB CD	429.00
Turbosport 386e	1MB BD	159.00
	4MB BD	495.00

OTHERS

	Memory Added	Price
AST Ext. Notebook	1MB SIMM	$ 79.00
	4MB SIMM	209.00
Sharp PC-6220 Notebook	1MB BD	139.00
Ti T.M. 2000	1MB BD	129.00
Ti T.M. 3000	2MB Kit	129.00
Everex Tempi LX	2MB MD	199.00
Panasonic CF-170,270,370	1MB CD	129.00
Epson NB3S	1MB UPG	159.00
	4MB UPG	399.00

Desk Top Memory Upgrades

Apple

	Memory Added	Price
Mac Classic	1-3MB BD	$ 89.00
	2MB Kit	89.00
Mac IIci,IIsi	1MB Kit	69.00
Mac IIsi	2MB Kit	159.00
Mac Ici,IIsi	4MB Kit	209.00
Mac IIsi	8MB Kit	499.00
Mac IIci,IIsi	16MBKit	629.00
Mac IIfx	4MB Kit	199.00
	16MB Kit	699.00
Mac SE,SE 30, Plus, II, IIcx,IIx	4MB Kit	199.00

AST

	Memory Added	Price
Bravo	486/25 2MBKit	$ 119.00
	8MB Kit	409.00
Prem 386/SX16 & 20, 25, 33	8MBKit	409.00
Prem II SX/20	1MBKit	59.00
SX/16	4MB Kit	219.00
Cupid Exp.	8K BD	269.00
Premium 386C	1MB Kit	59.00
WKST & Bravo Premium	4MBKit	189.00
	286	
Fastram	512-2MB BD	289.00
FastramKit	512Upg.	55.00
Premium 386	1MB Kit	59.00
	4MB Kit	249.00

APPLE

	Memory Added	Price
DP 386/ 33,486/25,33 & Systemp	2MB MD	$ 119.00
	8MBMD	395.00
DP 386/ 20e,20 & 25e,25	1MB BD	139.00
	4MB BD	299.00
	1MB MD	89.00
	4MB MD	209.00
DP-386S/16	1MB BD	119.00
	4MB BD	299.00
	1MB MD	89.00
	4MB MD	209.00
DP 286N, 386N, & 386SX/20	1MB MD	69.00
	2MB MD	109.00
	4MB MD	249.00
	OK BD	99.00
DP 386/16	1 MB BD	279.00
	2 MB BD	599.00
	8 MB BD	899.00

IBM

w/Model	Memory Added	Price
50Z,55SX,70-E61, 70-121,P-70	1MB	$ 59.00
50Z,55SX,70-E61, 70-121,P-70	2MB	109.00
55SX,65SX,55LS, 34F3077	4MB	239.00
70-A21,A61,B21, B61	2MB	119.00
30/286	2MB	99.00
PS/1	2MB	119.00
80-041	1MB	79.00
80-111,31	2MB	139.00
80-A21,A31,A61	4MB	239.00
90,95	4MB	259.00
70,80	2MB BD	319.00
50 & 60 Series	2MB BD	299.00
50 & 60	2MB BD	249.00
PS/2 Model 57SX,90,95	8MB MD	499.00

CALL FOR RISC SYSTEM 6000 MEMORY!!

NEC

	Memory Added	Price
P.M SX +	1MB BD	$ 189.00
	4MB BD	579.00
	8MB BD	1,099.00
P.M.SX/20	2MBCPU UPG.	189.00
	2MB UPG. & Exp.	269.00
	2MB UPG. Kit	119.00
P.M.SX/16	2-8MB Exp.	249.00
	2MB UPG. Kit	149.00
P.M.386/20	2MB MD	349.00
	8MB MD	999.00
P.M.386/25S	2MB Kit	199.00
	8MB Kit	659.00
P.M.386/25	2MB MD	349.00
	8MB MD	859.00
	8MB Repl BD	1,199.00
P.M.386/33E&486/25E	2MB MD	279.00

ZENITH

	Memory Added	Price
Z-386/20, 25,33,33e	1MB SM	$ 69.00
	2MB SM	129.00
	4MB SM	259.00
Z-386SX, 286-LP+,Z-LS Mastersport SL	2MB SM	119.00
	2MB MD	199.00

Laser Printer Memory

Model	Memory Added	PRICE
H.P.Laserjet IIP, III,IIID,IIIP	1MB Module	$ 85.00
	2MB Module	119.00
	3MB Module	179.00
	4MB Module	209.00
H.P.Laserjet II,IID	1MB Module	85.00
	2MB Module	119.00
	4MB Module	209.00
H.P.Laserjet IIIsi	1MB Module	69.00
	4MB Module	189.00
H.P.Deskjet IBM 4019,4019e	256K Module	109.00
	1MB Module	99.00
	2MB Module	139.00
	3.5MB Module	219.00
OKI Laser 400	1MB Module	109.00
	2MB Module	149.00
OKI Laser 800,820	1MB Module	109.00
	2MB Module	149.00
	4MB Module	199.00
Panasonic 4450	1MB Module	160.00
Panasonic 4420, 4450i	1MB Module	99.00
	2MB Module	149.00
	4MB Module	249.00

Chips SIMMS

STANDARD SIMMS	PRICE	DRAM PART#	DRAM PRICE
256X8-10	$ 17.00	1X1-80	$ 4.95
256X9-80	15.00	256-80	1.80
1X8-80	43.00	256-70	2.00
1X9-80	43.00	256X4-80	5.00
1X9-70	45.00	4464-80	2.50
4X9-80	169.00	4464-10	2.00
4X8-80	159.00		

Math Coprocessors

IIT

Part #	Price
2C87-8	$ 79.00
2C87-10	89.00
2C87-12	99.00
2C87-20	109.00
3C87SX-16	139.00
3C87SX-25	159.00
3C87-20	179.00
3C87-25	179.00
3C87-33	189.00
3C87-40	209.00

Cyrix

Part #	Price
82S87-20	$ 99.00
83S87-16	149.00
83S87-20	159.00
83S87-25	169.00
83D87-16	199.00
83D87-20	189.00
83D87-25	189.00
83D87-33	199.00
83D87-40	229.00

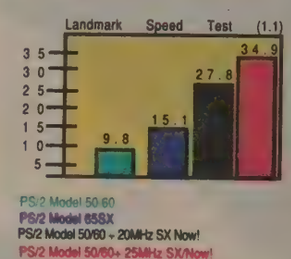
intel

Part #	Price
80487SX-20	$ 509.00
80387-33	219.00
80387-25	219.00
80387-20	219.00
80387-16	219.00
80387SX-20	159.00
80387SX-16	149.00
80287XL	109.00
80287XLT	109.00

KINGSTON

Convert your 286 to a 386

The SX/NOW Works with: IBM , AST, Compaq, Epson, HP , NEC, AGI



KINGSTON SX/NOW CPU Upgrades

20 Mhz	$ 345.00
25 Mhz	395.00

All Products 100% Guaranteed!

WE CARRY MEMORY FOR ALL COMPUTERS AND LASER PRINTERS AT LOWEST PRICES!

from universities, government & qualified firms! International orders & FAX orders accepted

WE NOW CARRY DISCOVER

H.Co. Computer Products

17922 Sky Park Circle #F
Irvine, CA 92714

Orders 1-800-726-2477
Tech Support 1-714-833-3364
Information 1-714-833-3222
FAX 1-714-833-3389

GermanyOffice: ThomasBohlmann
Charlottenburgerufer 18. 1000 Berlin 10
TEL: 030/3410478 FAX: 030/3426310

TERMS:

1. PO's accepted from universities, government agencies & qualified firms.
2. VISA,MC,AMEX,COD,pre-paid & apprived PO's only, please.
3. FAX orders accepted.
4. Internatinal orders accepted.
5. 15% Restocking fee on returns within 30 days. No refunds after 30 days
6. No Software returns.

OPEN WEEKENDS

* Any legitimate advertised price from companies with new merchandise actually in stock. Offer excludes Chips and SIMMS. Trademarks are the property of their respective companies. Prices are subject to change.

1992 H.Co. Computer Products.

Your First Computer

About Networks

BY MIKE MARKOWITZ

Local area networks, or LANs, represent one of the most intimidating topics in all of personal computing. But I cannot put off writing this column forever, and I've been meeting more and more users who have cobbled together their own home systems linking two or three computers—maybe we should call them DANs (domestic area networks).

Computer networking is not only an esoteric subject, with its own dense jargon, it is also an emotional issue, tapping into bubbling cauldrons of fear and loathing. Personal computing began with people who desperately wanted their very own computers because they were sick of begging some dorky System Administrator for a few more processor cycles or kilobytes of storage. Talk to a rugged individualist of personal computing about how neat local area networks can be, and he hears, looming in the background, the voice of the System Administrator saying, "No, you can't do that."

Why do people create personal computer networks? Usually to share scarce resources. Sometimes to share information or services. Network resources can be things like high-quality printers or high-speed modems. Information might be intra-office electronic mail, or a customer database that several workers need to access at the same time.

Like most computer topics, networking has a hardware part and a software part.

Like most computer topics, it also can be considered from a Macintosh perspective or an MS-DOS perspective. In the real world it often has to be considered from a mixed Mac/MS-DOS perspective, perhaps with UNIX, or some DEC or IBM mainframe thrown into the pot.

THE SEVEN-LAYER MODEL

To reduce networking to "a hardware part" and "a software part" is such a gross oversimplification that every engineer, consultant, and programmer who read the previous paragraph probably stopped reading in disgust.

The official way of dividing up the subject is called the OSI (Open Systems Interconnection) model. This is a mandatory viewgraph in every presentation about networks, and you can't get out of this column until you've seen it:

- **Physical Link**—the actual wires
- **Data Link**—what regulates data moving through the wires
- **Network**—what handles the routing or "addressing" of data packets
- **Transport**—what makes sure the data arrives intact—without errors
- **Session**—what manages communication
- **Presentation**—what translates data so that a program can display, store, or use it
- **Application**—what the user sees, points a mouse at, or types into.

A local area network consists of at least two computers with something to connect them. The connection is usually a physical cable, but wireless networks, based on infrared or radio signals, are also possible.

THE HARDWARE PART

A local area network consists of at least two computers with something to connect them. The connection is usually a physical cable, but wireless networks, based on infrared or radio signals, are also possible.

A network usually includes other devices besides computers, such as printers. Every device on a network is called a node.

In the MS-DOS world (IBM PCs and compatibles) there are two major network hardware standards: Ethernet and Token Ring.

Ethernet is a relatively old standard, developed more than twenty years ago as a way for remote terminals to communicate with mainframe computers at very high speed (up to 10Mbits per second, theoretically) over relatively long cable runs. There are different kinds of Ethernet cable—thick, thin, and "twisted pair" (the cheapest).

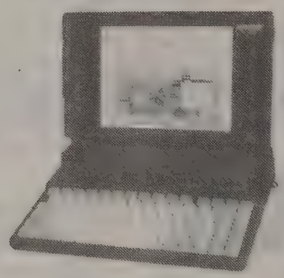
Token Ring is a newer standard promoted by IBM. It generally costs more and has two versions that differ in maximum data rate—4 or 16Mbits per second. Those Who Know say it is also more reliable across several of those seven OSI layers, and has other esoteric technical advantages.

Each computer needs some kind of network adapter that the cable plugs into. A network adapter can be a built-in feature of the computer, a circuit card that goes into a slot, or an external box that connects to the computer's serial (or parallel, or SCSI, or...) port.

The nature of the market is that network adapters get cheaper and more sophisticated every year, allowing more and more naive

© 1992 by Mike Markowitz.
You can send email to Mike Markowitz on America Online (MOUSKOWITZ) or the Internet (mmarkowi-@pepvax.pepperdine.edu). Or fax (310)983-1474.

NoteStar Notebook Computers



Model	Price
16 MHz 386SX/40 MB	$1,545
16 MHz 386SX/60 MB	1,579
16 MHz 386SX/80 MB	1,649
16 MHz 386SX/120 MB 8 MB RAM	2,185
20 MHz 386SX/40 MB	1,790
20 MHz 386SX/60 MB	1,824
20 MHz 386SX/80 MB	1,893
20 MHz 386SX/120 MB 8 MB RAM	2,400
25 MHz 386SL/60 MB	1,970
25 MHz 386SL/80 MB	2,050
25 MHz 386SL/120 MB	2,350
25 MHz 386SL/120 MB 8 MB RAM	2,680

All Computers Come Complete With MS Windows, DOS 5.0, PereLine Communications Software, NoteStar Utility Software, A Leather Carrying Case, Autoswitching 110/220 V AC Adapter, External Keyboard Adapter Cable, 2 Batteries, 2 MB Of Memory, 1 Serial Port, 1 Parallel Port, 64 GrayScale VGA Screen With External Connector.

Built-In Power-Saving Features Automatically Conserve Energy When Not In Use. Average Battery Operation Time Per Charge is From 3 to 5 Hours. NoteStar Provides A Full 1 Year Warranty And Guarantees 48 Hr. Turnaround or A New Machine.

Ergonomically Sloped Keyboard Has Inverted T for Cursor Keys, and Separate Keys for Ins, Del, Home, PgUp, PgDn and End.

OPTIONAL FEATURES INCLUDE:

Option	Prices
Ethernet Module	$173
Modem Module 2400	120
FAX Send/Receive 2400	120
External 5.25" Floppy	232
Car Adapter Cable	25
SCSI Interface	85
3 Button Serial Mouse	29
Memory 2 MB Increments	110
Plus More	25

PereLine Data Systems
750 Camden Ave, Suite B
Campbell, Ca 95008
Tel: (408) 364-2770
Fax: (408) 364-2788
Prices subject to change w/o notice

users to discover incompatible combinations. Farallon Computing, one of the leaders in Mac network hardware, recently released sixteen new Ethernet adapters for various Macintosh models, at prices ranging from $259 to $529.

MACINTOSH NETWORKS

In the Macintosh world, a basic network capability is built into every computer and many printers. The software part is called AppleTalk, while the hardware part, including various cabling options, is called LocalTalk—but Mac users often use these terms interchangeably.

On paper, LocalTalk is almost shockingly slow, with a maximum data rate of 230 kilobits per second. LocalTalk connectors plug into the serial printer port of a Mac, so throughput is limited to what an RS-232 serial port can support.

On the other hand, LocalTalk networks tend to be incredibly easy to install, operate, and manage (compared to their DOS rivals). The software part—AppleTalk—can operate very well over much faster networks; in fact, Apple has started building Ethernet capability into its latest models, such as the Macintosh Quadras and the newest laser printer.

THE SOFTWARE PART

There are many different ways in which a network can be organized. Engineers talk about different network "topologies," such as stars, rings, and branching trees. A LocalTalk network, for example, is a simple chain that cannot be joined in a ring—if you accidentally connect the first node to the last it gets confused and won't work.

Functionally, you can divide networks into two broad categories—peer-to-peer nets and server nets.

A peer-to-peer network is sometimes called a "distributed server" because network functions are shared by all the computers that are connected (and powered up). This is a relatively inexpensive way to share a printer and exchange files and messages within a small workgroup. The current Macintosh operating system (System 7.0 and higher) provides a simple, built-in peer-to-peer AppleTalk network.

With MS-DOS systems, you have to buy and install network software separately, since these functions are not built into the system software.

A server network uses one computer to host a central repository of programs, files, and network services. Ideally, a server should be a powerful, fast computer with lots of memory and hard disk storage. It is even possible for other computers on the network to be diskless workstations that rely on the server for almost everything.

Many commercial programs are available in "network-aware" versions that can be installed on the server and checked out by a remote user, rather like a library book. There are also "multiple-launch" network programs, that allow a certain number of copies to run simultaneously. Even more sophisticated are multiple-user programs—mostly databases—which use various file locking schemes to ensure that only one user at a time will be making changes to a particular data item.

A server can be a post office as well as a data library. "Mail server" software handles the time and date stamping, delivery, forwarding, enclosures, and other aspects of electronic mail. Most servers also provide printer spooling. If multiple users are all trying to print at the same time, the print spooler software stores them temporarily, manages an orderly print queue, and allows the users to get on with their work.

Automatic periodic backup is another important network service. Since users don't always take the time to make regular backups of critical files, it is reassuring to have a tape drive or removable cartridge device attached to the server, with software that routinely makes safe copies of all the files that have been changed since the last backup. There are even products that provide network virus checking and eradication.

The dominant vendor of MS-DOS network server software is Novell, Inc. Novell's family of products is called NetWare. NetWare has a reputation for being tricky to install and maintain; you can even take a training course to become a CNE ("Certified NetWare Engineer"). Developed originally for heavy-duty corporate applications, NetWare can be sized for small businesses—as few as five users for about $1100.

Other important players in the network software market include Banyan (whose product family is called VINES) and Artisoft, with a popular peer-to-peer product called LANtastic. There are many, many others.

People are eager to sell you total network "solutions." They are a high-profit item. If you are thinking about a network, here are some questions you should ask the next vendor, consultant, or customer engineer...

•How many installations of this system are in use?

•How do I actually add or remove nodes? How long does it take?

•How do I get updates or upgrades of the software? When is the next one?

•What do I do for after-sale service and support?

•Show me a list of compatible software applications.

•Tell me about known incompatibilities and bugs (marketing people don't like the word "bug"—they prefer to say "anomaly" or "undocumented feature").

Nobody will actually have answers to all of these questions, but the way they respond will tell you a lot about the outfit you are dealing with. ■

THE LEADER IN CUSTOMER SERVICE!

WE'LL MAKE SURE YOU LEAVE FEELING SATISFIED, BECAUSE YOUR SATISFACTION IS OUR BIGGEST GUARANTEE.

COME VISIT OUR SHOWROOM IN THE SOUTH BAY AND ON THE PENINSULA.

486-50/33 MHz w/256K CACHE

- Intel 80486 Processor
- 8K Internal Cache
- 256K Ultra-Fast External Cache
- 4 MB Memory (Exp. to 64 MB)
- 1.2 MB Floppy Drive
- 1.44 MB Floppy Drive
- **120 MB IDE Hard Drive (17ms)**
- 64K Cache Buffer
- IDE 1:1 H/F Controller
- 2 Serial, 1 Parallel, 1 Game
- Clock/Calendar
- **Super VGA Card w/1 MB**
- Super VGA Monitor (1024x768 .28 Dot)
- 101 Enhanced Keyboard
- Med Size Tower Case w/230 W Power Supply

Call/$1788

FREE Mouse MS-DOS 5.0 with every system purchase

SHAREWARE AVAILABLE IN OUR STORE

386-33/40 MHz w/64K CACHE

$1368/1398

- 4 Megabyte Memory (Exp. to 32 MB)
- 1.2 MB Floppy Drive
- 1.44 MB Floppy Drive
- **120 MB IDE (18ms) HDD**
- **Super VGA Monitor (1024x768 .28 Dot)**
- **Super VGA Card w/1M**
- 1:1 Hard/Floppy IDE Controller
- Multi-I/O Card
- Mini Tower Case w/PS
- 101 Enhanced Keyboard

A 386SX-25 Complete System for a 286 Price!

- **1 Megabyte Memory**
- **1.2 MB Floppy Drive**
- **42 MB Hard Drive**
- **2 Hard/2 Floppy IDE Controller**
- **2 Serial, 1 Parallel, 1 Game Port**
- **Clock/Calendar**
- **16 Bit SVGA Card w/512K**
- **14" SVGA Monitor (1024x768 .39 dot)**
- **101 Enhanced Keyboard**
- **Mini Tower Case w/Power Supply**

$888

386-25 MHz NON-CACHE

- 1 Megabyte Memory (Exp. to 32 MB)
- 1.2 MB or 1.44 MB Floppy Drive
- **84 MB IDE (18ms) HDD**
- **Super VGA Card w/512K**
- **Super VGA Monitor (1024x768 .39 Dot)**
- 1:1 Hard/Floppy IDE Controller
- 2 Serial, 1 Parallel, 1 Game
- Mini Tower Case w/PS
- 101 Enhanced Keyboard

$1038

WE OFFER COMPLETE INSTALLATION, REPAIR, UPGRADES & A LOT MORE!

MOTHERBOARDS

486-33 MHz 64K cache w/CPU	$605
386-40 MHz 64K cache w/CPU	295
386-33 MHz 64K cache w/CPU	285
386-25 MHz w/CPU	210
386SX 25/16 MHz w/CPU	155/140
286-16 MHz w/CPU	80
286-12 MHz w/CPU	70

KEYBOARD

Maxi-Switch 101	$36
Keytronics 101	42
Montenery 101	45
Chicony 101	38
101 key AT/XT	30
Focus 2001/5001	45/70

HARD DRIVES

Seagate 40 MB IDE	$215
Conner 40 MB IDE	215
WD 80 MB IDE	295
Conner 120 MB IDE	360
Conner 200 MB IDE	595
Maxtor 338 MB ESDI	CALL
Colorado 120 MB tape drive	215
Colorado 250 MB tape drive	270
Mountain tape drive all models	CALL
Archive tape drive all models	CALL
SONY CD-ROM all models	CALL

NEW SOUTH BAY BRANCH OFFICE!

BETA NINETIES COMPUTER INC.

1655 SOUTH MAIN STREET • MILPITAS, CA 95035

TEL: (408) 956-8800

FAX: (408) 956-1236

(MAIN STREET & MONTAGUE EXPRESSWAY)

MONITORS

12" MONO Monitor	$70
14" MONO Monitor	92
14" SVGA Monitor (1024x768, .39)	240
14" SVGA (1024x768, .28) Monitor	280
14" SONY 1304 SVGA Monitor	575
16" Nanao 9070U	CALL

MISCELLANEOUS

Serial Mouse	$20
Logitech Mouseman serial/bus	65/75
Logitech Trackman serial/bus	75/85
Zoltrix 9600 int Fax modem	82
2400 Int/Ext modem	42/78

ADD-ON CARD

DTC 7280 1.1 MFM	$60
DTC 7287 1.1 RLL	70
DTC 6280 1.1 ESDI	123
DTC 3280 1.1 SCSI	123
Adaptec SCSI 1542B	CALL
Ultrastor ESDI 32K	150
IDE dual Adapter	15
1.2/1.44 Floppy controller	35
Four Floppies controller	40
AT/IO (2s 1p 1g)	18

FLOPPY DRIVE

TEAC 1.2M/1.44M	$60/58

CASE & POWER SUPPLY

Mini Vertical w/200W P.S.	$75
Med Vertical w/200W P.S.	95
Big Vertical w/230W P.S.	125
Baby AT case w/200W P.S.	75
AT Deluxe case	52
AT 230W/XT 150W P.S.	49/39

NETWORK CARD

ARCNET	
8-bit, bus, coax	$59
16-bit, bus, coax	99
8-port Active Hub	155
ETHERNET	
8-bit NE-1000 Compt	$99
16-bit NE-2000 Compt	129

Please call for NOVELL Network software & hardware installation prices.

VIDEO CARD

Speed Star Plus w/1M Hi-Color	$185
Orchid Pro IIS w/1M Hi-Color	195
Trident w/1 MB	85
OAK VGA 16 bit	38
MGP	18

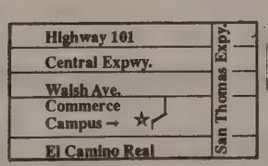
- System Upgrade Available
- Prices Subject To Change w/o Notice
- 20% Re-Stocking Fee On Non-Defective Returns
- All Trademarks Belong to Their Respective Companies
- We Are Not Responsible For Typographic Errors
- DEALER INQUIRIES WELCOME

C&J COMPUTER

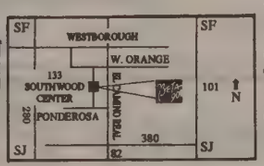
2370-A WALSH AVE., BLDG. C
SANTA CLARA, CA 95051

(408) 727-0788

Fax (408) 727-1209



VISA



BETA NINETIES COMPUTER INC.

133 SOUTHWOOD CENTER
SO. SAN FRANCISCO, CA 94080

(415) 875-6682

Fax (415) 875-6683

Mon-Fri 9:30-6:30 pm Sat 11-5 pm

Name brand quality in every system!

486-EISA 50MHz 645MB hard drive

Mylex 4MB EISA SCSI CONTROLLER, 256K Cache 4MB RAM

- *Intel* 80486DX-50MHz CPU,
- 8K internal Cache, 0 wait state
- *Weitek* 4167 Co-processor socket
- 256K fast SRAM Cache
- 4MB RAM, Maximum 64MB
- *AMI* BIOS, *Intel* 82350 EISA chipset
- Eight 32bit EISA slots
- *Maxtor* 645MB SCSI drive
- *Mylex* DCE376 EISA Cache 32bit SCSI controller w/1MB RAM (Maximum 16MB), Data transfer rate 26MB/sec
- 300 Watt power supply with two cooling fan
- *Teac* One 5 1/4" 1.2MB floppy drive
- *Teac* One 3 1/2" 1.44MB floppy drive
- Two serial, One parallel & Game port
- *Diamond Stealth* VGA card w/1024K 1280x1024, Hi-color, Non-interlaced
- *NEC* 4FG 15" multisync monitor, Falt Screen, NI
- *Focus* 2001 enhanced keyboard
- Landmark 197MHz (V1.14)
- Power meter 19.9 mips (V1.5)

$4999

486-33 EISA 240MB hard drive
1MB, *Ultrastor* 15C Cache controller W/ 1MB (8MB maximum), two floppy drive, TVGA card w/1024K, *Viewsonic* V6 14" non-interlaced monitor

$2899

486-50MHz
64K Cache
1MB RAM
$1095

- *Intel* 80486DX-50MHz CPU, 0 waite state
- *AMI* BIOS, Co-Processor build-in
- 8K internal Cache
- 128K fast SRAM Cache on board
- 1MB RAM on board, 32MB Maximum
- *Teac* 1.2MB or 1.44MB floppy drive
- Two serial, one parallel, game port
- *Focus* enhanced keyboard

Conner 210MB hard drive, *Viewsonic* V6 Non-interlaced SuperVGA system **$2125**

Serving You For Over 7 Years!

486-33MHz
64K Cache
1MB RAM
$799

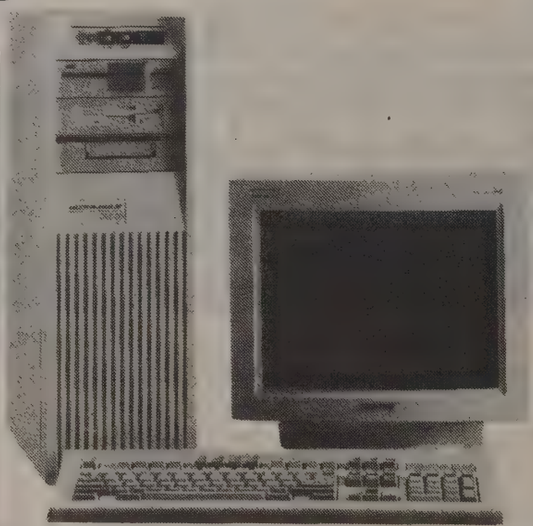
- *Intel* 80486DX-33MHz CPU, 0 awit state
- *AMI* BIOS, Co-Processor build-in
- 64K fast SRAM Cache
- 1MB RAM on board, 64MB Maximum
- *Teac* 1.2MB or 1.44MB floppy drive
- Two serial, one parallel, game port
- *Focus* 2001 enhaced keyboard

Conner 210MB hard drive, *Viewsonic* V6 Non-interlaced SuperVGA system **$1797**
Conner 210MB hard drive, 14" Mono System **$1499**

386-33MHz
64K Cache
1MB RAM
$529

- *Intel* 80386DX-33MHz CPU
- *AMI* BIOS, Co-Processor socket build-in
- 64K fast SRAM Cache on board
- 1MB RAM on board, 32MB Maximum
- *Teac* 1.2MB or 1.44MB floppy drive
- Two serial, one parallel, One game port
- *Focus* 2001 enhanced keyboard

Conner 210MB hard drive, SuperVGA System **$1487**
Conner 120MB hard drive, 14" Mono System **$ 997**



386SX-25MHz
1MB RAM
$399

- *Intel* 80386SX-25MHz CPU
- *AMI* BIOS, Co-Processor socket build-in
- 1MB RAM on board, 8MB Maximum
- *Teac* 1.2MB or 1.44MB floppy drive
- Two serial, one parallel, One game port
- *Focus* 2001 enhanced keyboard

Conner 120MB hard drive, SuperVGA System **$1127**
Conner 40MB hard drive, 14" Mono System **$ 717**

TOSHIBA T5200C
386-20MHz 200MB

- 2MB RAM
- 91-key keyboard
- 1.44MB floppy drive
- 200MB hard drive, 16ms
- 10.4" STN-LCD high resolution VGA color display 640x480, 16 color

$4,599

T3300SL 386DX 80MB *$3,449*

TOSHIBA T2000SX
386SX-16MHz 40MB

- 1MB RAM
- 86-key keyboard
- 1.44MB floppy drive
- 40MB hard drive, 19ms
- 8.5" Fluorescent sidelit LCD, VGA display 640x480, 16 grayscale
- Removable NiCkel Battery (3 hours)

$1,899

T2000SX 60MB *$2,149*

TOSHIBA T2000SXe
386SX-20MHz 40MB

- 2MB RAM
- 86-key keyboard
- 1.44MB floppy drive
- 40MB hard drive, 19ms
- 8.5" Fluorescent sidelit, white LCD VGA display 640x480, 16 grayscale
- Removable NiCkel Battery (3 hours)

$2,299

T2000SXe 60MB *$2,499*

Mercury Computer Corporation

1601 Telegraph Avenue, Oakland, Ca 94612 Phone:(510)763-7631 Fax:(510)763-0814

Huge Selection, Great Service and Support!

VIDEO CARD

Orchid

Fahrenheit 1MB Hi-Color 1280x1024		$275
Pro-Designer IIS 1MB 1024x768		175

Trident

TVGA	1MB 1024x768	84

Diamond

Stealth 1280x1024, Non-interlaced, VRAM	299
SpeedStar 1024x768, Non-interlaced	199

MONITORS

Nanao

9500	20" 1280x1024 .31	1899
T560i	17" 1280x1024 0.25	1899
9070U	16" 1024x768 .28	955
9080i	16" 1024x768 .28 NI	1075

NEC

3FG/4FG/5FG	639/789/1399
6FG 21" 1280x1024 .28mm 135MHz bandwidth	2899

Eye-Q

SuperVGA	14" 1024x768 .28	295
14" mono	flat screen (Amber or White)	95
12' Mono	Amber, Hi-res. 720x348	75

Sony

1304S	14" 1024x768 .25 Non-in. Low radiation	579
1604S	17" 1024x768	1075
1936	20" 1280x1024 non-in. low radiation	2499

Panasonic

C1381i	14" 1024x768 .28	329
C1395	14" 1024x768 .28 Multis	469
C1991	20" 1280x1024	1599

DRIVES

Teac (Floppy drive)

360 K / 1.2MB 5.25"	$ 59
1.44MB 3.5"	59

Maxtor

LXT-213	SCSI	213MB	15ms	589
LXT-340	SCSI	340MB	15ms	929
4170E	ESDI	158MB	16ms	749
4170S	SCSI	158MB	16ms	749
8380S	SCSI	360MB	14ms	1089
8760S	SCSI	650MB	14ms	1495
7080	IDE	80MB	19ms	269
7120A	IDE	125MB	15ms	359

Conner (IDE Hard drive)

3000	IDE	40MB	28ms	209
3084	IDE	80MB	19ms	299
30104	IDE	120MB	19ms	369
3204	IDE	212MB	19ms	599
3504	IDE	510MB	12ms	1299
30174	IDE	170MB	15ms	449
3544	IDE	543MB	12ms	1299

Colorado (Tape back-up drive)

Jumbo	DJ-10	120MB	Internal	199
Jumbo	DJ-20	250MB	Internal	289
AB-11	External Adaptor			45
KE-9	External kit (w/o Controller)			79

Everex

Tape drive	60/120MB Internal	239
Tape drive	120/240MB Internal	269
EV-880	Tape adaptor	69

CD-ROM drive

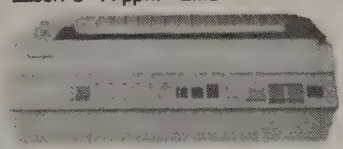
Sony Laser library 640MB External	499
NEC CD Gallery w/7 software, Koss speaker, Stereo headphone	589

PRINTERS

Panasonic

KX-P1180	9 pin	192 cps	80 col	149
KX-P1123	24 pin	214 cps	80 col	195
KX-P1124i	24 pin	214 cps	80 col	279
KX-P1524	24 pin	240cps	132 col	329
KX-P1695	24 pin	330cps	132 col	349
KX-P2624	24 pin	300 cps	136col	389
KX-P4410	Laser	4ppm	512K	645
KX-P4450i	Laser	11 ppm	2MB	1099
KX-P4455	LaserPS	11 ppm	2MB	1695

Brother



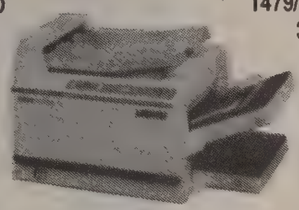
1809/1824	Call
1909/1924	Call
HL-8V	Call

EVEREX

Abaton laser 6ppm ps 24 fonts PCL4 Apple talk 1495

Hewlett Packard

DeskJet500/500C	399/695
LaserJet IIP+/IIIP	775/Call
LaserJet III/IIID	1479/2395
LaserJet IIISi	3495



EPSON

LQ-570	24pin	315cps	80col	269
LQ-870	24pin	413cps	136 co	469
LQ-1070	24pin	315cps	136col	399
LQ-1170	24pin	413cps	136col	629
LQ-2550	24pin	400cps	136col	899
FX-850	9pin	264cps	80col	319
FX-1050	9pin	264cps	132col	439
EPL-7000	Laser	6PPM	512k	819
EPL-7500	LaserPS	6PPM	2MB	1999
EPL-8000	Laser	10pmm	13 scalable fonts	1399

Commax 486DX-33MHz Notebook

Commax 486DX-33MHz 80MB

- *Intel* 80486DX - 33 MHz CPU
- *Phoenix* BIOS (128K ROM)
- 8K internal cache memory
- 4MB RAM upgradable to 8MB or 20MB

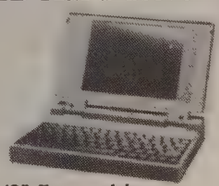
$ 2899

- 1.44MB floppy disk drive, 80MB fast 19" hard disk drive
- One serial, one parallel ports, External monitor, keyboard /keypad and mouse connect , external floppy drive socket, Expansion bus connector and internal faxmodem socket
- Cirrus Logic's 16-bit GD6410 VGA chipset with 256K, 64 gray shades, 640x480 resolution, supports external VGA monitor for up 800x600,CCFT Super-twist 10", fast response, Paper white LCD screen
- Auto switching 110/220VAC adaptor with removable & rechargable NiCad battery
- 84/85 key keyboard, four separate cursor controls, inverted "T" type, Connector for external keybord keypad
- Weight 6 lbs.(with battery), MS DOS 5.0 w/ Video utilitys & driver automatic power management, Cover close alarm, complete User's menual
- Options: spare NiCad battery pack $99, 4MB memory module $399, 16MB memory module $1,399, Internal FAX / Modem card with MNP5 (FAX 9600 bps/Modem 2400bps) $295

Commax Ultrathin Notebook

386SX-20 60MB Hard drive

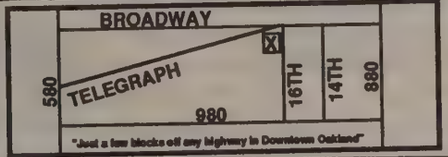
$1,899



- *Intel* 80386SX 20MHz CPU
- 60MB Hard drive
- External 1.44MB 3 1/2" floppy drive
- 2MB RAM (5MB maximum)
- Intel Co-processor socket built-in
- 640x480 LCD screen, 32 gray shades
- One parallel, one serial port
- One 1.44MB floppy drive (3 1/2")
- NiCad rechagable/removable battery
- External keyboard adaptor, External VGA adaptor
- Weight 4lbs (with battery)
- MS DOS, carrying bag, user's manual
- Auto switching power adaptor 110-240VAC

Store Hours:
M-F: 9AM to 6PM
Sat.:10AM to 4PM

MasterCard VISA

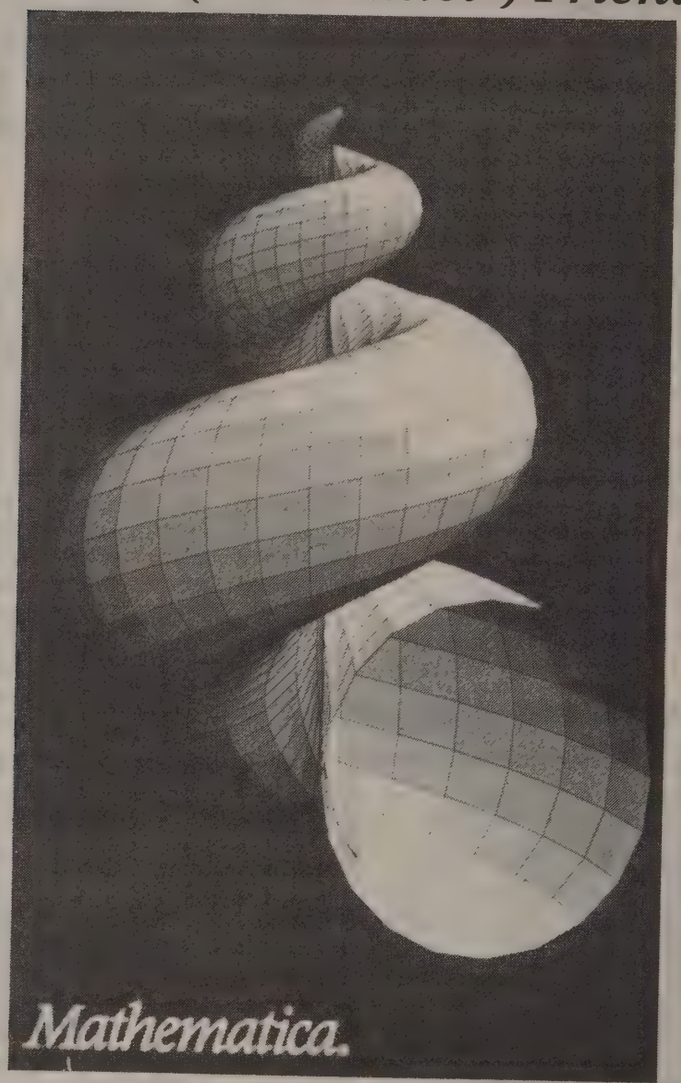


Sales Hotline: 510-763-7631
Tech Support: 510-763-0949

Mood Indigo

SGI's "RISC PC" Combines Workstation Power With User- (And Wallet-) Friendliness

BY GAIL KESNER



Mathemetica meets Indigo, with spectacular results.

In the future, the one who tells the best story will be the one who creates the best picture.

The Indigo, Silicon Graphics, Inc.'s (SGI) new computer, is a powerful little workstation with impressive capabilities to show pictures that tell great stories. The Indigo makes high-performance graphic workstations accessible to a wider audience than ever before. It is less expensive and easier to use than any of SGI's previous products, while delivering impressively fast graphics and processing capabilities, putting high-quality image production in the hands of a lot more people.

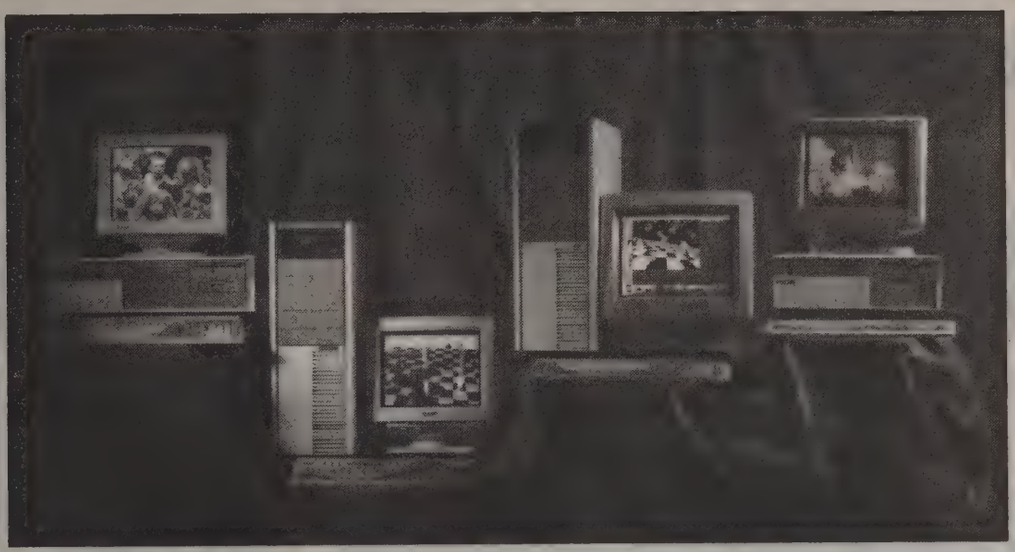
SGI refers to the Indigo as the RISC PC. It fits on a bookshelf or desk, but supports 90% of the graphics calls of Silicon Graphics' high-end IRIS workstations. The Indigo can run a wide range of applications, including PC- or Macintosh-style applications such as word processing and database applications, as well as other applications that allow non-programmers to create three-dimensional graphics, scientific visualization, and presentation images. The Indigo was designed for such CPU- and graphic-intensive applications as animation and graphic arts, as well as engineering, and CAD and CASE tools. The lower price ($9995 for the basic system; $7995 for a diskless system; more depending on the disk, card, and memory configuration desired) means that graphics, animation, and architecture studios, universities, and research facilities can use Indigo workstations on the workbench, while using the higher-end workstations for more specialized analysis and visualization needs.

While the Indigo was designed to maximize digital media capabilities, it was also designed to be easy to assemble and use. When I opened the box, I got one page of completely pictorial (no words!) instructions that led me through assembling the machine in less than ten minutes. Once assembled, the Indigo has several applications that let me use it immediately: jot, a simple text processor; Showcase, a user-friendly presentation tool for Indigo that provides an integrated drawing

Over time I've used earlier Iris workstations. Each cost over $50,000 and required a power supply such that I could not use it at home without rewiring my house. I had to learn UNIX, vi, and C to navigate through the system and produce the simplest graphics. Now I can plug the Indigo into my wall outlet just like my Macintosh. The interface is easy to use; I can create simple graphic images and documents and navigate my way through the file system within moments of plugging in the machine.

Copyright © 1992 by Gail Kesner. All rights reserved.

BUY DIRECT FROM FACTORY AND SAVE



HIGHEST QUALITY IN PERFORMANCE AND GUARANTEED LOW PRICES

PIXEL 486 — Made in USA

- 80486™ 33MHz or 50MHz CPU
- w/ Cache RAM
- 1Mb RAM Memory
- 1.2Mb Floppy Drives
- 120Mb Hard Disk 18ms
- Video Caching and Shadowing
- Super VGA Card w/ 512Kb
- SVGA Color Monitor (1024x768)
- 1 Parallel, 2 Serials, 1 Game Ports
- 101 Keys Keyboard
- Baby AT Case + 200 Watts P.S.
- Custom Configuration Available

33Mhz **$1318**

50Mhz **$1728**

PIXEL 386 — Made in USA

- 80386™ 33MHz or 40MHz CPU
- 64 K Cache RAM
- 1Mb RAM Memory
- 1.2Mb Floppy Drives
- 120Mb Hard Disk 18ms
- Video Caching and Shadowing
- Super VGA Card w/ 512Kb
- SVGA Color Monitor (1024x768)
- 1 Parallel, 2 Serials, 1 Game Ports
- 101 Keys Keyboard
- Baby AT Case + 200 Watts P.S.
- Custom Configuration Available

33Mhz **$1058**

40Mhz **$1078**

PIXEL 386 — Made in USA

- 80386™ 25MHz CPU
- w/out Cache or with 64K Cache
- 1Mb RAM Memory
- 1.2Mb Floppy Drives
- 80Mb Hard Disk 18ms
- Video Caching and Shadowing
- Super VGA Card w/ 512Kb
- SVGA Color Monitor (1024x768)
- 1 Parallel, 2 Serials, 1 Game Ports
- 101 Keys Keyboard
- Baby AT Case + 200 Watts P.S.
- Custom Configuration Available

w/out Cache **$908**

w/64K Cache **$983**

PIXEL 386sx — Made in USA

- 80386sx™ 16MHz or 25MHz CPU
- w/out Cache
- 1Mb RAM Memory
- 1.2Mb Floppy Drives
- 40Mb Hard Disk 28ms
- Video Caching and Shadowing
- Super VGA Card w/ 512Kb
- SVGA Color Monitor (1024x768)
- 1 Parallel, 2 Serials, 1 Game Ports
- 101 Keys Keyboard
- Baby AT Case + 200 Watts P.S.
- Custom Configuration Available

16Mhz **$768**

25Mhz **$798**

One Year Warranty Parts & Labor On Systems

486/386 Basic Systems

Include

- Motherboard & CPU
- 1.2Mb Floppy Drive
- 2S, 1P, 1G Ports
- 1Mb RAM Installed
- Internal Clock/Calendar
- AT Case + 200W P.S.
- IDE 1:1 2HD/2FD Controller
- Math Coprocessor Socket
- 101 Key Enhanced Keyboard

PIXEL 486-33MHz EISA w/ Cache	$1233	PIXEL 386-25MHz w/ 64K Cache	$403
PIXEL 486-33MHz w/ Cache	$713	PIXEL 386-25MHz w/o Cache	$363
PIXEL 386-40MHz w/ 64K Cache	$433	PIXEL 386sx25MHz w/o Cache	$313
PIXEL 386-33MHz w/ 64K Cache	$423	PIXEL 386sx16MHz w/o Cache	$296

80486, 80386, 80386sx are trade marks of Intel. All other products and brand names are trademarks of their respective companies. Price is subject to change without notice.

MOTHERBOARD w/ CPU

- MB 386sx16MHz $133
- MB 386sx25MHz $155
- MB 386-25MHz $193
- MB 386-25MHz w/ 64K Cache $253
- MB 386-33MHz w/ 64K Cache $265
- MB 386-40MHz w/ 64K Cache $283
- MB 486-33MHz w/ Cache $553
- MB 486-33MHz w/ 64K Cache LOCAL BUS ..... $Call
- MB 486-33MHz w/ Cache EISA $1033
- TP SONIC 386-40MHz w/ 64K Cache $595
- TP SONIC 486-33MHz w/64k Cache $995

HARD DISK & FLOPPY DRIVE

- 40Mb / 28ms or 52Mb / 17ms ..... $Call
- 80Mb / 18ms or 100Mb/ 18ms ..... $Call
- 120Mb / 18ms or 130Mb / 15ms ..... $Call
- 213Mb / 16ms or 240Mb / 15ms ..... $Call
- 360Mb SCSI or ESDI ..... $Call
- 660Mb SCSI or ESDI ..... $Call
- FD 1.2Mb (Teac) $55
- FD 1.44Mb (Teac) $55

MONITOR

- 14" Impression SVGA (1024x768) .28mm $275
- 14" KFC Non-interlace (1024x768) .28mm $325
- 14" ViewSonic 6 / 5+ ..... $355 / $555
- 14" Club AT (1024x768) .28mm Interlaced $345
- 14" Club AT (1024x768) Non-Interlaced $385
- 14" Sony 1304S / 1604S ..... $555 / $995
- 16" Nanao 9080I / F550I (17") ..... $898 / $1198
- Other ..... $Call

SVGA CARD

- MGP Card $15
- SVGA Card w/ 512Kb $45
- Trident SVGA w/ 1Mb $73
- Diamond Speed Star Plus w/ 1Mb $139
- Diamond Speed Star Plus Hi-Color w/ 1Mb $153
- Diamond Stealth VRAM w/ 1Mb $255
- Pixel SVGA Fx Hi-Color w/ 1Mb $145
- Pixel S3 Turbo Windows Accelerator $225
- Orchid Pro Designer IIs w/ 1Mb $155
- Orchid Pro IIs w/ 1Mb (w/ 32,768 Colors) $175
- Orchid Farraheith w/1Mb (w/32,768 Colors) $245
- Generic S3 w/ 1Mb $195

INTERFACE CARDS

- DTC 7287 MFM Controller $65
- DTC 7280 RLL Controller $65
- DTC SCSI Controller $115
- Adaptec 1542 BK / 1522 BK ..... $275 / $155
- IDE Controller $15
- IDE Controller w/2s, 1p, 1g $25
- Ultrastor ESDI w/32k Cache $168
- AT I/O 2s, 1p 1g $15
- Printer card $15
- Serial Card $15
- Game Card $15

KEYBOARDS

- Keyboard 101 BTC $20
- Keyboard 101 MNB Click $45
- Keyboard Keytronic $45
- Keyboard Focus 5001 ..... $75
- NorthGate 102 Keys $75
- NorthGate Ultra Keys $95

ACCESSORIES

- Modem 2400 Baud Rate $45
- Modem 2400 & Fax 9600 ..... $75
- Modem 9600 Baud Rate $275
- **Modem 9600 + Fax 9600 V. 32 & V. 42 ..... $345**
- Sound Blaster (Regular or Pro) ..... $109 / $195
- Windows 3.0 ..... $45
- MS-DOS 5.0 or DR-DOS 6.0 ..... $45
- Microsoft Mouse Compatible $15
- Logitech First Mouse $39
- Logitech Kids Mouse $45
- Logitech Track Man Mouse $69
- Logitech Mouseman Combo $69
- Logitech Scanman w/ 256 gray scale $275
- Microsoft Mouse $65
- System Stand $6.95
- Printer Stand $2.95
- Mini Desktop Case + Power Supply 200W $55
- Mini Tower Case + Power Supply 200W $65
- Medium Tower Case + Power Supply 230W $99
- Full Size Tower Case + Power Supply 230W $135
- Power Center $19
- Keyboard Drawer (under table) $18
- Keyboard Drawer w/ Power Center $59
- Sony Int. CD-ROM w/ 6 CD Software Libraries ... $495

Pixel USA

Financing Available
Excellent Customer Service and Technical Support
24 Hours Turn-Around Time On Service
All Systems Are Burned-In and Tested for 72 Hours

1937 Tully Road • San Jose, CA 95122

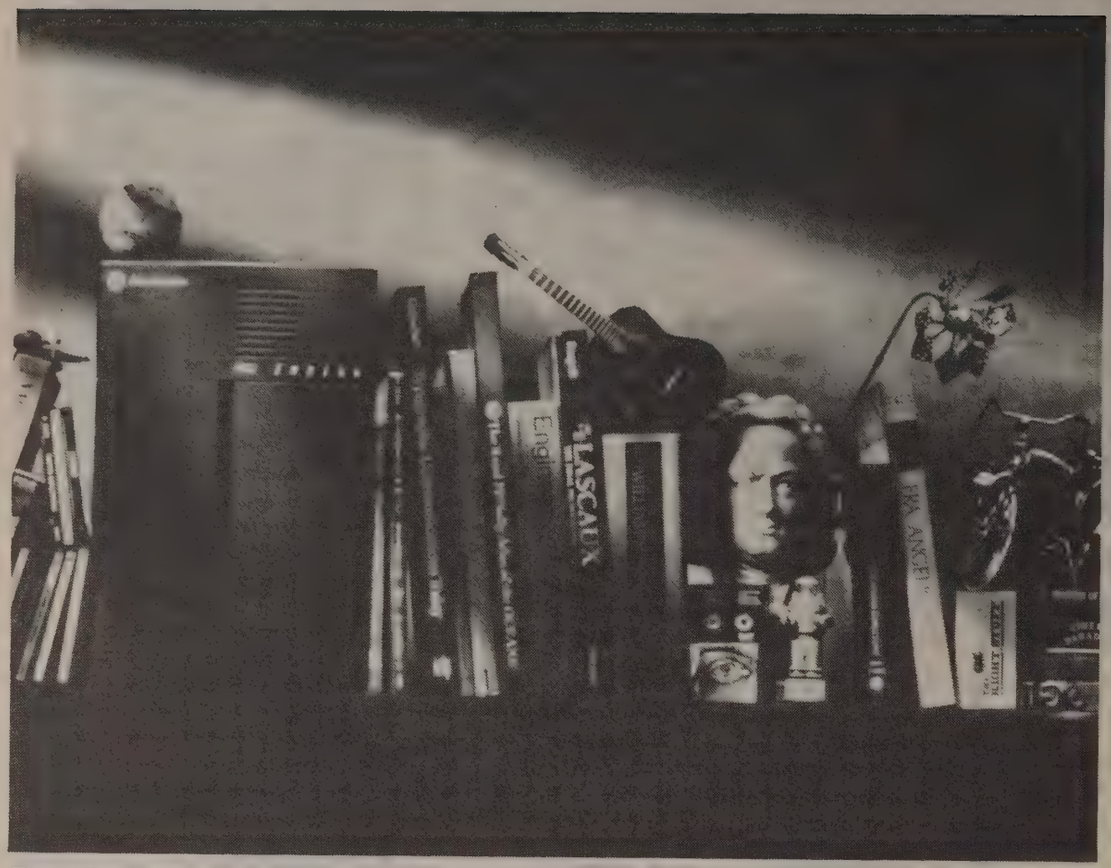
Bus: **(408) 929-7218**

Fax: **(408) 929-7244**

Office Hours:

Mon - Fri : 9:30 am - 7:00 pm • Sat.: 10:00 am - 6:00 pm

VISA MasterCard



The Indigo is a true multimedia machine.

and presentation package for creating simple drawings and on-screen slide shows; and the IRIS Explorer, a scientific visualization tool that enables users to plug their data into a variety of graphic modules to create three-dimensional displays.

Over time I've used the IRIS Series 1400, 2400, 3000, and an early model of the IRIS Series 4D. Each cost over $50,000 and required a power supply such that I could not use it at home without rewiring my house. I had to learn UNIX, vi, and C to navigate through the system and produce the simplest graphics.

Now I can plug the Indigo into my wall outlet just like my Macintosh computer. It takes up a little more space, mainly due to the larger monitor. The interface is easy to use; I can create simple graphic images and documents and navigate my way through the file system within moments of plugging in the machine. There are many shrink-wrapped applications for the Indigo that were unimagined four years ago.

My first impression was that the Indigo had really fast processing speed throughout. Even scrolling through text, such as listing of a directory or viewing a man page, the text appears on the screen much faster than I can read it. The ability to choose colors based on the color editor and mapping system was fun to play with, and I enjoyed the demonstration images for their speed and complexity.

However, no computer is perfect. The three-button mouse stopped working on the second day and I had to swap it for another one. And I failed (user error) to log out before turning off the Indigo, and I was not able to log in again. I called SGI's technical support who provided me with instructions on how to repair a few files while in single-user mode. I was impressed with the person I spoke with in technical support—she was knowledgeable and supportive.

DESIGNED FOR MULTIMEDIA

Images that move realistically enable people to clarify and understand complex concepts. The Indigo has opened up new means of communication by supporting multiple processing and I/O to media such as CD-ROM, video, or DAT tapes.

The Indigo has ports for video tapes or CD-ROM I/O that let you display and record moving images with animation or titles, and add sound. For example, you could have an application running on the screen with the video output window capturing the image to videotape, while using the Indigo's microphone to narrate information that supports the on-screen images.

A scientist, such as a molecular biologist, could send the tape across the country saying, "These are the results of the experiments we've been collaborating on." Someone who needs to do a status update on a project could say to the boss, "Here, I've made this video tape for you; watch it at your convenience at home, and we'll discuss it when you've had an opportunity to review it." A stockbroker could watch financial news on the Indigo while running financial analyses in another application simultaneously.

The Indigo is designed as a multimedia computer that can process audio and video input without having the information pass through the system bus, so that very few of the system resources are used to run live video into the system. An optional video card, due in June, has been designed to sit on a special video bus, so that live video will be integrated into the Indigo with very little performance degradation. The optional video card supports both PAL and NTSC and the choice for format will be software selectable. An audio card that allows multiple channels into the Indigo to be mixed together and sent out as two channels is being developed by a third-party vendor.

SYSTEM SOFTWARE

The Indigo provides a graphical user interface that replaces the old command-line means of issuing system commands, and also provides a graphic image of the system's state. The Indigo has a window called WorkSpace (sort of a you-are-here iconic display) that allows you to click a graphic image of the directory that you want to access, rather than typing "cd" as old-time UNIX users are used to doing.

WorkSpace lets you view the world as icons. For example, if you click on the "ls" icon, an output window appears displaying the contents of the current directory. I found double-clicking applications to start them in a UNIX environment a little confusing, but it's probably intuitive and user-friendly to those who come from a graphical interface background. The Indigo's tools menu also provides a shell for command-line commands.

The Indigo is shipped with Showcase, an integrated drawing and presentation package, that includes a toolset called Gizmos. Each Gizmo is an independent window you can use separately or in groups. It has a nice online help package, and a time-stamped status dialog box. Also included is the IRIS Explorer, a scientific visualization tool that graphically displays the components, where modules for visualizing data can be connected by pipes like Tinkertoys.

HARDWARE

The CPU is 15" tall, 9.5" wide, 10.9" deep, and has three slots for cards, one of which is used by the main processing card, leaving two expansion slots available for high-speed networking, image compression, and video deck control, or additional I/O. The chassis has three front-loading slots for hard disks, DAT, or floppy drives that can be easily snapped into place. On the back are ports for SCSI-II,

CLUB PC

THE AFFORDABLE PC STORE

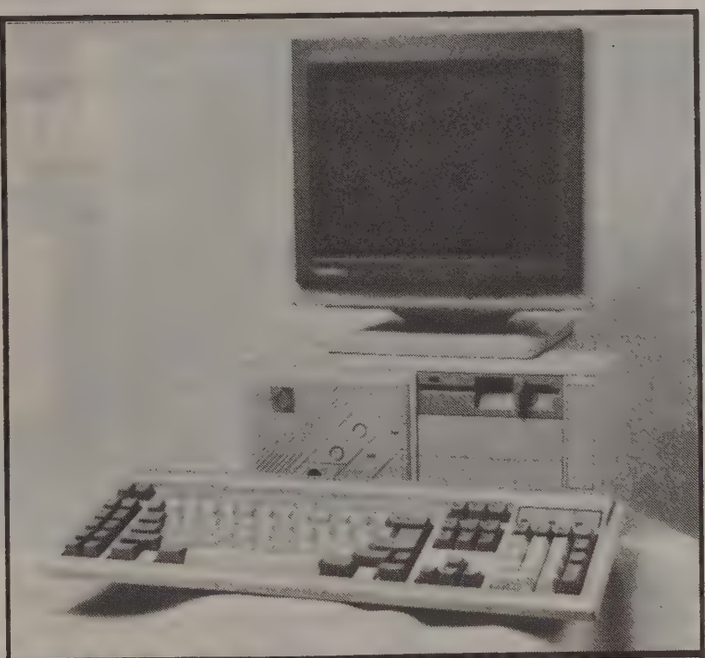
CTi BASIC SYSTEM CONFIGURATION

- Motherboard & CPU
- 1 MB Installed
- Enhanced Case w/Power Supply
- 1:1 2HD/2FD Controller
- 1.2 MB or 1.44 MB Floppy
- 2 Serial/1 Parallel Ports
- 101-Key Enhanced Keyboard
- Internal Clock/Calendar
- GEM Desktop Software
- 5 Year Labor
  1 Year Parts Warranty

CTi 286-16	$243
CTi 386SX-16	$298
CTi 386SX-25	$309
CTi 386-25	$367
CTi 386-33C w/64K CACHE	$415
CTi 386-40C w/64K CACHE	$430
CTi 486-33SX	$450
CTi 486-33C w/64K CACHE	$715
CTi 486-50C w/256K CACHE CACHE	$1077
CTi 486-33C EISA w/256K CACHE	$1235
CTi 486-50C EISA w/256K CACHE	$1698

OTHER OPTIONS:

40 MB IDE Drive	CALL	Fax Modem (9600 Fax)	$88
80 MB IDE Drive	CALL	2400 Int. Send-Fax Modem	52
120 MB IDE Drive	CALL	14" Mono Subsystem	98
200 MB IDE Drive	CALL	Serial Mouse	19



VIDEO OPTION PACKAGES

VGA PACKAGE

ADDONICS VGA MONITOR
- 640 x 480 Resolution
- 14" w/Swivel Base
- 0.39 DPI

16-BIT VGA CARD
- 800 x 600 Resolution
- 256K RAM

$238

SUPER VGA PACKAGE

CASPER SUPER VGA MONITOR
- 1024 x 768 Resolution
- .28 Dot Pitch
- 14" w/Swivel Base

16-BIT 512K VGA CARD
- 1024 x 768 Resolution
- Windows 3.0, AutoCAD Drivers

$298

SUPER NON-INTERLACE PACKAGE

QM848 MONITOR
- 1024 x 768 .28 Dot Pitch
- Non-Interlace

16-BIT NON-INTERLACE VGA CARD
- 1 MB RAM
- 1024 x 768 Resolution
- 256 Color

$398

WE WILL MATCH ANY LOCAL COMPETITORS CURRENT PRICE ON PRODUCTS WE CARRY

IN CAL:

(408) 441-8816

FAX: (408) 441-8838

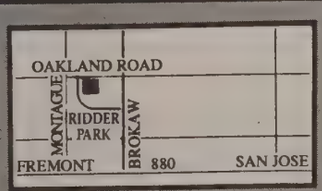
1352 RIDDER PARK DR.

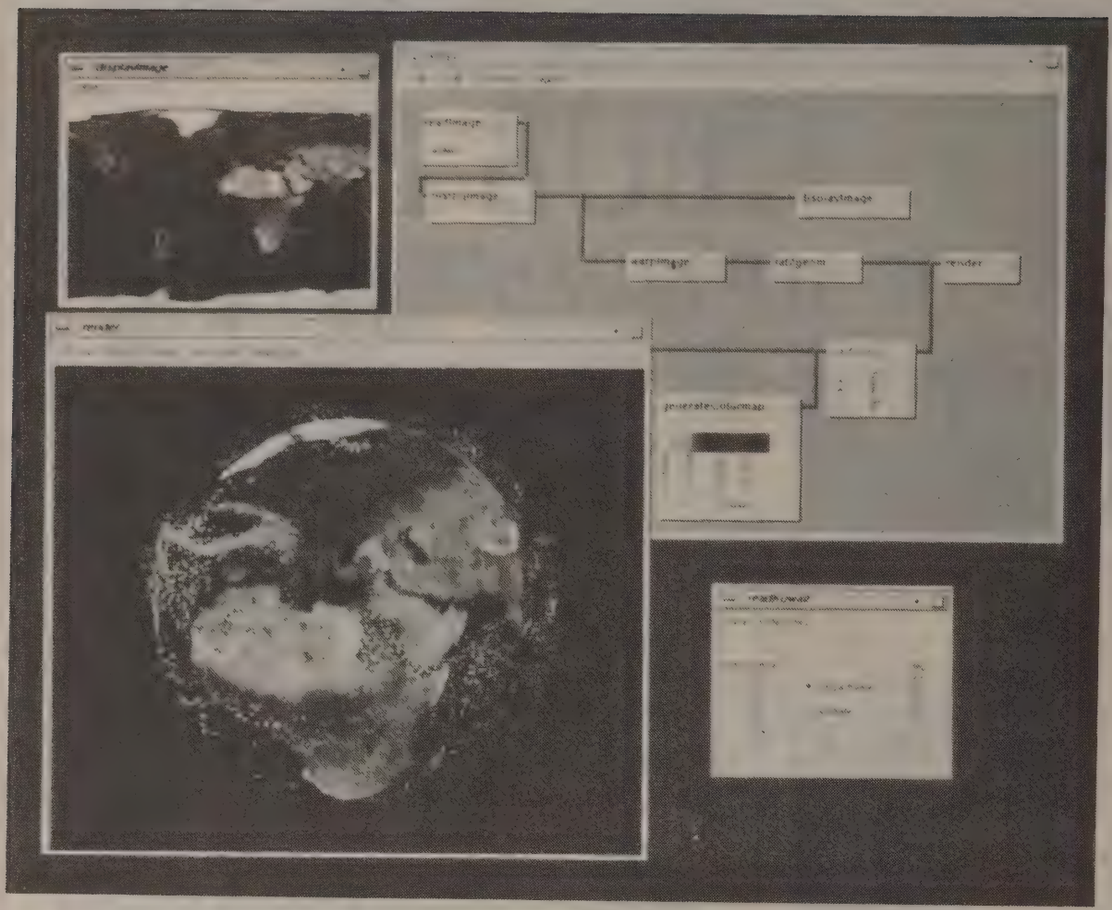
SAN JOSE, CA 95131

CORPORATE, UNIVERSITY & GOV'T PO'S WELCOME

HOURS:
Mon-Fri.
9 am-7 pm

Prices & Availability Subject To Change w/o Notice





Iris Explorer lets users create three-dimensional displays.

Ethernet, serial lines, stereo lines, a microphone input jack, a headphone stereo output jack, and a digital I/O jack for digital audio. The processors are MIPS R3000At CPU with 32K data and instruction caches, and a MIPS R3010At floating point unit. The Indigo runs at 33MHz CPU bus speed.

GRAPHICS

To accelerate data paths, the Indigo uses general-purpose processing and special purpose circuitry, and runs a version of SGI's IRIS Graphics Library (GL) that uses Indigo's CPU and FPU to perform most of the graphics calculations previously performed by proprietary graphics processors. GL graphics can be displayed within subwindows of X applications.

The framebuffer supports 1024 x 768 pixels, and includes eight bitplanes for screen images, two bitplanes for overlays, and two window-clipping bitplanes. The Indigo uses ASIC chips to dither full RGB values into an 8-bit framebuffer, and uses dithering to create a virtual 24-color system so that the Indigo is compatible with software written on other SGI IRIS computers.

The Indigo support calls for object modeling in three-dimensional space for spatial transformations, for lighting, rendering polygonal and spline surfaces, smooth animation, and other tasks. It provides the full set of IRIS PowerVision graphics features (except for stencil-plane functions), which include fogging and multiple arbitrary clipping planes. Much of the Indigo's graphics functionality is built into the software, so the graphics include many features found on SGI's higher-end models.

POLYGONS

In statistics provided by SGI measuring color planes, Z buffer, clock and bus speed, and I/O, the Indigo compares favorably to the Macintosh IIfx and Quadra computers, the IBM 220, and the Compaq 486 at a lesser price. According to these statistics, the Indigo has the edge of three-dimensional graphic rendering over Sun's IPX, which has faster two- and three-dimensional vectors per second but did not include numbers for Z-buffering and triangles and polygons per second. The recently announced Indigo ELAN, which will start around $29,000 and ship later this year, is equal to or better than Hewlett-Packard's HP720 CRX 24Z and Sun's SUN SS2 GT with respect to color planes, polygons per second, and I/O, while also costing less.

AUDIO

The audio control panel shows input and output levels for both left and right channels and lets you choose the source and input/output rate in CD or DAT format. The audio displays are both two- and three-dimensional, and the Indigo is being used for acoustical research. The Indigo offers an audio library for programming its audio hardware that lets programmers design software that reads, writes, edits, and processes digitized sound. A third-party audio card is expected to be on the market this year.

APPLICATIONS

SGI worked with its software vendors, encouraging them to create scaled-down, modular versions of their software to run on the Indigo, and package their software in less-expensive modular units. The software that runs on the Indigo ranges from spreadsheets, word processors, and database applications to highly specialized graphics applications used for visualizing and modeling spatial properties in three-dimensional space, finite element analysis, animation, and solid modeling.

XAOS provides **nTitle**, software that lets animators and movie makers produce titles for movies with a wide variety of great three-dimensional and color special effects. The software takes full advantage of the Indigo's ability to perform rapid transformations. nTitle provides extensive font- and character-generation abilities combined with the ability to input and output to many three-dimensional formats. XAOS is almost exclusively an SGI shop, making the most of the different SGI workstations' capabilities to create dynamic graphic titles that are used in feature movies.

I was able to try the Island package of products and found **IslandWrite** to be a nice document-producing package, similar in functionality to **FrameMaker.** It is packaged with **IslandDraw** and **IslandPaint**, both full-featured paint and draw packages.

SoftImage's **Actor** is an impressive animation package that models movement very realistically. The demo I saw showed a three-dimensional wire-frame image of a finger that could be made to rotate and bend at the joints by using the mouse.

Structural Dynamics Research Corporation runs a software package on the Indigo that does mechanical solid modeling, drafting, engineering, and visualization. This product is used by companies that need to consider ergonomic properties of the products that they manufacture, and it uses the processing power of Indigo to perform tolerance analysis and run an integrated database for stress analysis.

Dynamic Graphics, Inc.'s **Interactive Volume Modeling** models and visualizes three-

Continued on page 254

Why CLOCK ?

- Eliminates Computer Clock Error
- Guarantees accurate time for your spreadsheets, documents, billing, and time tracking.
- No more late meetings: Keeps time management accurate
- Works with DOS or Windows
- Extremely Easy to Use
- Automatic: Just Install, Set and Forget
- No Hardware Changes Required
- Not RAM Resident: Consumes No Memory
- Works on Networks
- Suggested Retail Price: $19.95
- An ideal gift for any occasion

What Does CLOCK Do?

CLOCK is a program that corrects for the inaccurate hardware clocks found in IBM compatible computers. These inaccuracies cause large errors in the DOS or Windows system time. PC clocks usually run fast or slow by 5 to 20 seconds per day. This results in a cumulative error of between a half and two hours per year! CLOCK typically reduces this error to less than one minute per year with no hardware changes, and no loss of available memory (CLOCK is not RAM resident).

Available at Fry's ELECTRONICS Fry's and other software distributors

Pacific Standard Time
P.O. Box 2697
Santa Clara, CA 95055-2697
(408) 246-0589

Bay Area Computers

Guarantees the very lowest prices.

BAY AREA COMPUTERS — LOWEST PRICE GUARANTEED

CEDARS Power, Performance & Price • EISA Configuration Available

CEDARS 486-33

- 1MB RAM exp. to 32MB
- 1.2MB or 1.44MB Drive
- 2 Serial ports
- 1 Parallel
- 1 Game port
- 101 Enhanced Keyboard
- Complete Super VGA System .28 dpi
- The fastest Cedars ever

Super VGA $1499

CEDARS 386-33

- w/64k Cache
- 1MB exp. to 8MB
- 1.2MB or 1.44MB Drive
- 2 Serial ports
- 1 Parallel
- 1 Game port
- 101 Enhanced Keyboard
- Complete Super VGA System .28 dpi

$1149

CEDARS 386-25

- 1MB RAM exp. to 8MB
- 1.2MB or 1.44MB Drive
- 2 Serial ports
- 1 Parallel
- 1 Game port
- 101 Enhanced Keyboard
- Complete Color, VGA System .28 dpi

Color VGA $999

CEDARS 386SX-20

- Landmark=27
- 1MB RAM installed
- 1.2MB or 1.44MB Drive
- 1:1 FD/HD Controller
- 2 Serial ports
- 1 Parallel
- 1 Game port
- Case w/Power Supply
- 101 Enhanced Keyboard
- Color VGA System

Color VGA $888

Options:105MB HD $175, 125MB HD $225, 200MB Conner $300, Super VGA Color $199, 4MB RAM $149

CEDARS IS 100% IBM COMPATIBLE, 1 YEAR WARRANTY, PARTS & LABOR

OKIDATA

PC MAGAZINE

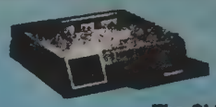
The Okidata® OL800
The Entry Level Business Page Printer

- 8ppm, 300dpi; crisp blacks, publication quality output
- 26 fonts/4 typefaces standard–more than LaserJet™III
- HP® Series II, IBM® ProPrinter® & Diablo® 630 compatible
- 200-sheet paper tray/2nd tray available for alternate paper
- Multi-user expandability
- With second tray and mechanism
- Upgrade kit allows fontscaling, rotation, grayscaling
- PostScript® upgradable

Only $898

Letter Quality Office Printing With MICROLINE® 390 and 391 Plus

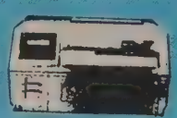
$399 $552



The Okidata® OL400
PC Magazine® Editors Choice

- PC Magazine Editors Choice–June 12, 1990
- 4ppm, 300dpi; crisp blacks, publication quality output
- More standard typefaces/fonts than LaserJet™IIP
- High-capacity 200-sheet paper tray included
- Slim, low-profile fits any desktop
- HP® Series II compatible

$575



New Okidata® OL830
The Smarter Printer

$1275

- 8ppm for high productivity
- Compatible w/5,000 software packages
- 17 scalable fonts for great output
- 2 MB memory for full page graphics
- OKIDATA's legendary 5-year printhead warranty

OKIDATA Reg. T.M. M.D.: OKI OKI T.M. OKI Electic Industry Co. Ltd.

Intel	
80287XL	88.00
80387SX-20	127.00
80387-33MHz/25	199.00
2400B Modem	127.00
Intel Satisfaction	359.00
Okidata	
ML320	289.00
ML321	406.00
ML390 Plus	399.00
ML391 Plus	552.00
OL400	575.00
OL800	898.00
OL830	1275.00
OL840	1588.00
Epson	
LQ570	269.00
LQ870	427.00
LQ1070	359.00
LQ1170	586.00
FX850	285.00
FX1050	399.00
Action Laser II	688.00
Software	
Lotus 123-RGL 3.1	389.00
Lotus 123-RGL 2.3	325.00
Lotus 123 for Windows	387.88
Microsoft Windows 3.0	84.99
Norton Utilities 6.0	119.99
PC Tools Deluxe 7.1	99.94
Hard Card	
HC IIXL 50MB	299.00
HC IIXL 105MB	419.00
Hewlett-Packard	
IIP+	777
IIIP	1075
LaserJet III	1468
LaserJet IIIsi	3388
LaserJet IIID	2288
PaintJet XL	1499
DeskJet 500/DW	BEST PRICE
DeskJet 500C/DW	688

The HP Vectra 386/25 PC

- 25MHz, 386™-based processor w/near zero wait-state memory
- 2MB RAM standard, exp. to 32MB
- 32KB cache memory architecture
- 42-340MB int. hard disk capacity

$Best Price

NEC MultiSync® 3FGX™ Color Monitor

Breakthrough display performance versatile 15" flat square multiple frequency color monitor.

1024x768 non-interfaced:
Extended VGA (60Hz**)

8514/A XGA
*VESA standard
**VESA Manufacturing guidelines

$675 In Stock

NEC MultiSync® 4FG™ Color Monitor

15" flat square, digitally-controlled multiple frequency monitor with NEC's exclusive AccuColor™ Control System.

PC MAGAZINE EDITORS' CHOICE

"PRODUCT OF THE YEAR" 1990

April 10, 1990
NEC MultiSync 4D

1024x768 non-interfaced:
Extended VGA (60Hz**)
Ergo EVGA (70 Hz*)

8514/A XGA
*VESA standard
**VESA Manufacturing guidelines

$775 In Stock

Now prices are lower than ever!

NEC PowerMate® 386/25 DX

Featuring a 25MHz microprocessor, 4MB (70ns) RAM, the NEC Concurrent Bus Design, and a vast selection of storage, graphic and peripheral options the PowerMate DX/25 offers superb performance in a beautifully engineered machine.

Starting at $1499

Before you buy any other printer read their fine print

Standard new Print Quality Enhancement Technology on the IBM® LaserPrinter 6 make even the fine print easy on the eye. What's more, you can bump up resolution from standard 300 x 300 dpi to 600 x 600 dpi with optional PostScript®, by adding 4MB of memory.

So if you look into another printer, be sure to look at the fine print.

10-page report? Wait just a minute!

The high performance 10-page-per-minute IBM® LaserPrinter 10 is engin-eered for speed, printing graphics 45% faster on average than the competition. Shift into optional PostScript® mode and accelerate graphics printing.

Test drive one today.

Best Price Guaranteed

IBM is a registered trademark of International Business Machines Corporation in the U.S. and/or other countries, and is used under license. PostScript is a registered trademark of Adobe Systems Inc. in the U.S. Lexmark is a trademark of Lexmark International, Inc. © 1991 Lexmark International, Inc.

PC MAGAZINE EDITORS' CHOICE

IBM

Authorized Dealer

HEWLETT PACKARD
COMPAQ
NEC
TOSHIBA
EPSON*
IBM

*Bring this ad in to get these prices!

MicroAge® BAY AREA COMPUTERS

Our 8th Year In Business

AMERICAN EXPRESS VISA

(415) 393-9600

130 Sansome St., San Francisco, CA 94104 at Bush

Prices subject to stock on hand. Prices reflect 3% cash discount.

Hours: 9-7 M-F 11-5 Sat.

* Drawing supervised by Computer Currents

Bay Area Computers

Guarantees the very lowest prices.

BAY AREA LOWEST PRICE GUARANTEED COMPUTERS

TOSHIBA

T2000SX/40/60 HD 1888/2188
T2000SXe/40/60 HD..... 2349/2549
T2200SX/40/60/80HD 2449/2599/2899
T4400SX/80 4399
T6400SX/120 4388

COMPAQ

LTE 386S/20 LT 40/60/84 2599
LTE 386S/25 LT 60/84/120 3299
Portable 486C/120 (Color) ...8399

AST

Premium Exec 386SX-20MHz, 40/60/80 HD 1849/2249/2699
Premium Exec 386SX-25MHz, 60/80 HD 2399/2699
Premium Exec 386SX-25 Color, 60/80 HD 3599/3799

NEC

Ultralite SX-20/40/60 ....$2699/2888
Ultralite SX-20L 2999
Ultralite III 2788
Cellular WS SX-20 3749

EVEREX

COMPUTER SYSTEMS DIVISION

Carrier 20MHz 40/2 .....$2399
Carrier 20MHz 80/2 2739
LX Notebook 20MHz 40/1 1699
LX Notebook 20MHz 60/1 1849

TOSHIBA T2000SX — $1888

- 80386™SX -8/16 MHz Processor
- 1MB RAM expandable to 9MB
- 40/60MB 19ms Hard Disk Drive
- IBM VGA Compatible Display System

EVEREX COMPUTER SYSTEMS DIVISION

Tempo Carrier — $2399

- 80386SX 20MHz 20/8MHz
- 2MB RAM expandable to 8MB
- 40 & 80MB HD
- 1.44MB 3.5" Floppy Drive
- 2 Serial Ports
- Weight 5.3 lbs.
- Includes DOS 5.0, MS Windows & Carrying Case

COMPAQ LTE 386 Lite 20/25

- 20/25MHz 386SL Microprocessor
- Socket for 25MHz 387SX Coprocessor
- 4MB Expandable to 10MB
- 3½" 1.44MB FD
- 40/60/80/120MB HD

Tempo LX — $1849

- 3.5" 1.44MB FD
- 40/60MB Hard Disk
- 5MB RAM
- MS Windows & Mouse
- MS DOS 5.0

EVEREX COMPUTER SYSTEMS DIVISION

COMPAQ 286 LTE Blowout! — $1148

- 3½" 1.44MB FD
- 40MB Hard Disk
- 640K RAM Exp.to 4.6MB
- Backlite LCD Display

AST Premium® Exec™ 386SX/25 — $2399 — In Stock on Demo

- 386SX/25 MHz
- VGA with 32 gray shades
- 2MB RAM
- 60/80MB Hard Drive

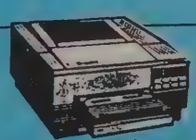
AST® Authorized System Reseller

AST, AST Logo and AST Premium registered & Exec trademark AST Research, Inc.

HP PaintJet XL Color Graphics Printer — $1499

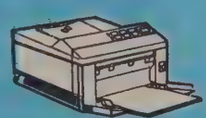
- 2-3 times faster throughput than the HP PaintJet Printer
- A- and B-size paper output; A-size presentation overheads
- Auto sheet feed for unattended, high-volume operation
- Can be configured for PC or Mac
- Extensive font capability

LaserJet III Printer — $1468



- Highest print quality in its class
- More fonts and scalable typefaces
- LaserJet compatibility protects your software investment

LaserJet IIP Plus Printer — $777



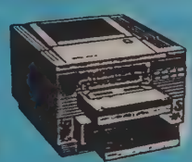
- Lowest price of any HP LaserJet printer for the most affordable solution
- 300 dpi text and graphics provide publication quality printing
- Small footprint makes this the ideal desktop HP LaserJet printer
- Support by virtually all popular PC software packages ensures maximum use
- Paper handling, additional memory, printer language and font accessories expand functionality

Hewlett-PackardDeskJet 500 Printer

- 300-dpi output
- Spreadsheets at the push of a button
- Wide variety of built-in fonts
- 3-year warranty
- Quiet, desktop operation

HP Printers Best Price!

LaserJet IIIsi Printer — $3388



- Fast 17-ppm printing
- 300DPI resolution
- HP PCLS language
- Networkable

Hewlett-Packard DeskWriter Printer

- Affordable laser-quality output
- For Macintosh® Fits on your desk

PC MAGAZINE EDITORS' CHOICE

$1075 In Stock!

LaserJet IIIP Printer

- Superior 300-dpi print quality
- PCL5 allows you to scale type to thousands of sizes
- All the HP LaserJet III printer features in a compact size and at a low price
- Prints fonts, graphics and complex documents faster than other laser printers in its class

HP DeskJet 500c

- Plain paper inkjet printing
- Black print speed up to 3 pages per minute
- MS Window color print speed 4 minutes per page
- 300 dpi resolution

HP DeskWriter C

- Identical to the DeskJet 500c but for your Macintosh
- HP PCL 3
- Centronics RS 232-C serial port (RS 232-C) is not recommended for color printing
- 48KB receive buffer
- Built-in fonts—Courier, CG Times, Letter Gothic

$688 for either printer

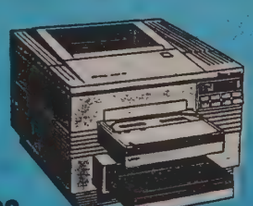
HP 95LX Palmtop PC with Lotus® 1-2-3®

PC power in the palm of your hand

1MB RAM

$575 in stock

LaserJet III D Printer — $2288



- Advanced paper-handling
- Resolution Enhancement for the best 300-dpi printing
- Ideal for high-volume, multi-user environments
- Wide variety of easy-to-use, scalable, built-in typefaces
- Optical envelope feeder handles 50 envelopes

Authorized Dealer

HEWLETT PACKARD
COMPAQ
NEC
TOSHIBA
EPSON®
AT&T Computer Systems Authorized Dealer
IBM

✂ Bring this ad in to get these prices!

MicroAge® BAY AREA COMPUTERS

(415) 393-9600

130 Sansome St., San Francisco, CA 94104 at Bush

Our 8th Year In Business

AMERICAN EXPRESS VISA MasterCard

Prices subject to stock on hand. Prices reflect 3% cash discount.

Hours: 9-7 M-F 11-5 Sat.

Why ACCESS?

5 years of business experience

$3 million in inventory

Located in the heart of Silicon Valley

Over 1,000 line items to choose from

Well-stocked 18,000 sq. ft. showroom

Experienced technical staff

Authorized sales & service for most national name brand products

Extended warranty available

All ACCESS Systems Feature:

- Motherboard w/CPU
- Basic memory installed
- 5.25", 1.2MB FDD
- IDE hard/floppy disk controller
- Serial/parallel/game ports
- Math coprocessor socket
- Real-Time clock/calendar
- 101 enhanced key keyboard
- Optional MS-DOS 5.0 $60
- 1 year parts & labor warranty

STORE HOURS

M-F 9-8
SAT-SUN 10-5
(Pacific Time)

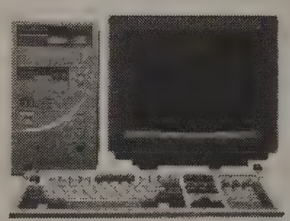
Smart Shoppers...

Sales & Service Open 7 Days!

486-50MHz
256K Cache w/1MB RAM
SUPER Fast!

$1299

LandMark 180.28 Norton SI 108.1



- 80486-50MHz CPU, 0 wait state
- 1MB RAM on-board exp to 32MB
- AMI BIOS • 8 16-bit expansion slots
- Tower case w/220watt power supply

System Upgrades

VGA Package \ HDD	80MB CONNER 30084	120MB CONNER 30104	200MB CONNER 3204
VGA ViewSonic 1 Oak 256K 800x600	$589	$689	$859
SVGA (Interlaced) Socos 1402 STB 1MB 1024x768	$709	$809	$1009
SVGA (Non-Interlaced) ViewSonic 6 ProDesigner IIS 1MB 1024x768	$889	$979	$1169

486-33MHz
64K Cache w/1MB RAM

$798

LandMark 120.12 Norton SI 51.4

- 80486-33MHz CPU, 0 wait state
- 1MB RAM on-board exp to 64MB
- AMI BIOS • 8 16-bit expansion slots
- Tower case w/220watt power supply

386-33MHz
64K Cache w/1MB RAM

$499

LandMark 50.3 Norton SI 40.1

- 80386-33MHz CPU,
- 1MB RAM on-board exp to 32MB
- AMI BIOS • 6 16-bit expansion slots
- AT case w/220watt power supply

386-40MHz $549

LOGITECH

FotoMan™
Digital Camera for DOS Systems
Introductory Price
$599

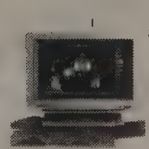
HOT for '92!

Now In Stock!

- Take up to 32 pictures from 3ft. to infinity
- Enhance photos w/FotoTouch™ Image Editing
- Save images in TIFF, ESP, PCX & BMP format
- Built-in auto flash for great indoor picture

NEC
MultiSync Non-interlaced Monitors

4FG $749
- 15" .28mm, 1024x768
- 75MHz bandwidth



5FG $1399
- 17" .28mm, 1280x1024
- 135MHz bandwidth

6FG $2999
- 21" .28mm, 1280x1024
- 135MHz bandwidth

Sales Hotline 408-247-4444

Technical Support 408-247-4990

Other Inquires 408-247-4444 Fax 408-247-4448

Corporate Sales 408-247-1908

Not responsible for typos / Price subject to change w/o notice / Price good thru 5/10/92

Shop At ACCESS!

Excellent selection on all your PC needs!

Avanti 025

Advanced Power Management Extends Battery Life!

BCC

Low Power AMD
386SXL/25MHz
60MB HDD Notebook

- 386SXL, 25 MHz
- **2MB RAM** exp. 8MB • 60MB HDD
- **FAX/Modem** • Piviting LCD Screen
- **Mouse, DOS 5.0 & Windows**

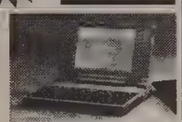
$2799

TEMPO EVEREX Carrier

New for '92

Letter-size, 5.3-pound Notebook Computer!

386-20MHz w/40MB HDD and KeyMouse!



- 386-20MHz, **2MB RAM** exp to 8MB
- **KeyMouse** built-in mouse pointer
- 3.5", 1.44MB floppy drive
- MS-DOS 5.0, Windows 3.0
- Modem slot
- System password protected

80MB version $2799

$2399

EPSON®

WHEN YOU'VE GOT AN EPSON, YOU'VE GOT A LOT OF COMPANY™

Advanced Power Management Extends Operating Time!

386SL/25MHz
w/ 64KB Cache
60MB Notebook

$2999

Other Models Available

- 386SL-25MHz, **4MB RAM exp to 20MB**
- 60MB HDD • VGA backlit w/64 grey scale
- **Upgradable to Active Matrix color**

TEMPO EVEREX LX

386SX-20w/60MB

FREE 2MB Upgrade! ($199 value)

- 386SX-20MHz, **3MB RAM** exp to 5MB
- 3.5", 1.44MB floppy drive
- MS-DOS 5.0, Windows 3.0
- Mouse & carrying case

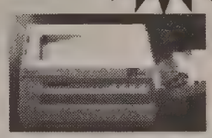
New Lower Price!

$1899

Monthly Special

Abaton
LaserScript LX
PostScript Laser
IBM & MAC Compatible!

FREE 4 Toner Cartridges w/ purchase ($116 value)



$1099 Includes AppleTalk Interface!

- 6 ppm, 2.5MB exp to 6MB
- 24 standard fonts, 35 type faces
- PCL 4 • 1 year limited warranty

Home & Office Equipment

Panasonic

Transferable Cellular Phone

$369

- Backlit keypad
- Microphone included
- Hands-free operation
- 2-level electronic lock
- 100 number memory
- And much more

EB-F20

Authorized GTE Mobilnet® Dealer

NEC

Portable Cellular Phone

$579

- 30-character LCD screen
- Built-in clock
- Internal loud-speaker
- Any key answer
- 99-number speed-dial
- And much more

P301

MOTOROLA Cellular

Flip Phone PC500	$629
Flip Phone PC900	$899
Portable UltraClassic	$599
Portable 8000HX	$349

NOKIA

Transportable Phone

$249 LC-11C

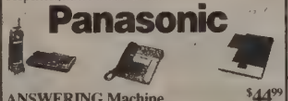
- Full 3-Watt power performance
- 30 number memory dial
- 3-year limited warranty

Portable Phone PT-612 $379

BellSouth Products

CONTOUR Desk/Wall Phone model #433	$17.99
HOME/OFFICE 2 Line Speaker 20 number memory #268	69.95
CORDLESS Single Paging Phone #model 660	44.99
CORDLESS 10 Channel 10 number memory #688	89.95
ANSWERING System Phone 13 number memory #1200	59.95
ANSWERING Machine beeperless/micro model #1127	34.99

Panasonic



ANSWERING Machine LED single cassette #1000	$44.99
ANSWERING Machine 2-Line time/day stamp #1740	119.99
SPEAKER Phone auto dial #2315	44.99
ANSWERING System Phone micro cassette #2390	69.99
2-Line SPEAKER Phone auto dial #3120	69.99
3-Line Speaker Phone w/3-way conference #3170	169.99
CORDLESS w/ One-Touch Redial model #3620	69.99

MicroComputer Accessories, Inc.

Our Most Popular Desks!

34" Desk	$139
48" Desk	169
60" Desk	189
72" Desk	219

MCA Office Furniture & Accessories
10% Over Cost!

FELLOWES®

Compact Personal Shredder

$99.99

- Shred size 1/4"
- 5 sheet capacity
- Auto stop/start function initiated by an electronic eye

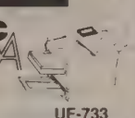
PS50

Fax Paper

98' 2 roll pk	$9.99
164' 6 roll pk	$29.99
328' 4 roll pk	$36.99

Panasonic Office Automation

Plain Paper Laser Fax



$1850 UF-733

- Laser-Beam print technology
- 15 second transmission speed
- Expandable memory (20 pg standard)
- 30 page ADF
- Confidential mail boxes
- Auto print reduction

Authorized PANAFAX Dealer

UF-311 Plain Paper InkJet	$1499
UF-312 Full-Featured InkJet	$1699

Equipped with Answering Machine Interface!

- 10 sheet automatic feeder
- Error Correction Mode
- 7 pages of memory
- Auto paper cutter
- 70 station autodialer

$599 UF-128M

KX-F50/90/110	$399/$589/$699
Toshiba 4600/TF-251	$549/629
Sharp FO-3300	1599
Samsung FX2310	469

M700/750	M1000
$349	$449

MURATA

HEWLETT PACKARD Plain Paper InkJet

Fax 300 $1388

HYUNDAI

Super 286/10MHz

Great Start-Up Computer!

$288

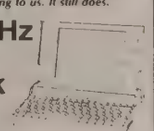
- 286-10MHz, 1MB RAM
- 12 exp slots
- MS-DOS & GW-BASIC
- 5.25", 1.2MB FDD
- 101 enhanced keyboard
- 18-month warranty

monitor not included

PACKARD BELL®

America grew up listening to us. It still does.

386SX/20MHz 60MB Notebook



$1599 PB38620NB6

- 80386SX/20MHZ
- 2MB RAM EXP. TO 8MB
- 60MB HDD, 29MS • BACKLIT VGA
- NiCad battery lasts for 3 hours
- MS DOS 5.0 w Shell Windows & QBasic

Keyboards

NORTHGATE COMPUTER SYSTEMS, INC.

Authorized Keyboard Dealer

OmniKey™ Keyboards

101NI	$69
102	79
Ultra	99

ACCESS

COMPUTER TECHNOLOGIES

"A Little Bit Better"

2225 EL CAMINO REAL SANTA CLARA, CA 95050

Smart Shoppers...

Sales & Service Open 7 Days!

NEW Products

Panasonic Office Automation

KX-P2180 45 dBA!

Quiet 9-pin Color Capable

$179

- Up to 240cps draft, 38cps NLQ
- 6 built-in fonts
- Paper parking • 240x216 dpi
- Color option available
- 2-year limited warranty

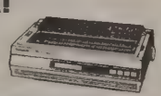
Color Option $49.95

KX-P2123

Quiet 24-pin Color Capable

43.5 dBA!

$249



Includes Adobe Type Manager!

- Up to 240cps draft, 64cps LQ
- 6 built-in fonts
- Paper parking • 240x216 dpi
- Color option available
- 2-year limited warranty

Color Option $49.95

KX-P4410

Laser Printer

Includes Adobe Type Manager!

$699 5ppm!

- 512K RAM exp to 4.5MB
- 250 sheet paper capacity
- 300 dpi resolution • 5 PPM

star micronics

The ImagePower™ Printers

9-Pin Printer

WIDE Carriage

NX1500

$229

EPSON® WHEN YOU'VE GOT AN EPSON, YOU'VE GOT A LOT OF COMPANY™

Action Printer

AP-3250 24-Pin

Ideal for home use! Easy Operation

$228

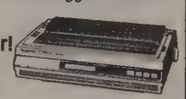
- 200cps, 360x360
- 24-pin scalable LQ fonts
- 50 sheet paper cassette
- 2 year limited warranty

ESC/P2™

It doesn't Scream, ... it whispers. **Panasonic** Office Automation

KX-P2624 *Come Hear the Difference!*

Quiet Printer Includes Adobe Type Manager!



- 24-pin letter quality
- 300cps, 100cps LQ
- 11 fonts, 26K buffer
- 2 year warranty

$379

KX-P1180i	$159	KX-P1695	348
KX-P1123	197	KX-P1624	349
KX-P1124i	289	KX-P1654	529

POSTSCRIPT

KX-P4455 PostScript Laser

$1699

- 2MB RAM exp to 4MB
- 500 sheet paper capacity
- 39 PostScript fonts • 11PPM

KX-P4450i $1099

Accessories for 4455/4450i

Legal Tray	49
Envelope Tray	69
Toner	39
Drum Unit	149
Developer	99

ACTION LASER II **EPSON®** WHEN YOU'VE GOT AN EPSON, YOU'VE GOT A LOT OF COMPANY™

Finally, An Affordable Laser Printer!

$699

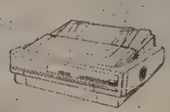
- 6 pages per minute • 512K expandable to 5.5MB • **14 standard fonts** • Font cartridge slot
- HP IIP emulation • 2-year limited warranty

14 Fonts! 6ppm!

FX-850

- 9-pin, 264cps
- NLQ built-in fonts
- 2 year warranty

$309



FX-1050

- 9-pin, 264cps
- WIDE Carriage
- 2 year warranty

$429

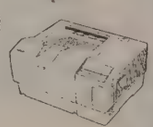
LQ-510	$229	LQ-1170	$599
LQ-870	459	DFX-8000	2199

EPSON® WHEN YOU'VE GOT AN EPSON, YOU'VE GOT A LOT OF COMPANY™

EPL-8000

13 Scalable fonts!

NEW FOR '92!



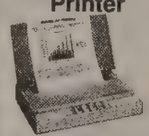
10ppm! $1399

- 10 ppm
- PCL-5, 13 scalable fonts
- RITech for crisper, sharper
- Built-In printer sharing
- 2-year warranty

brother We're at your side.

InkJet Portable Printer HJ-100*i*

Identical to Canon BJ-10ex



$269 SAVE $50 compared to Canon BJ-10ex

3 Emulations!

- Prints up to 83cps
- Text & graphics up to360dpi
- Uses plain paper & transparencies
- 1-year warranty

Canon

BJ-10ex Bubble Jet $319

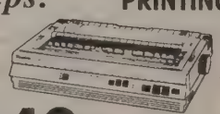
HEWLETT PACKARD

DeskJet 500 Color		$699
IIP*Plus*	4ppm, PCL-4	799
III	8ppm, scalable fonts	1499
IIID	8ppm, dual tray, PCL-5	2295
IIISi	17ppm, auto interface switch	3499

KX-P1695

9-PIN GREAT FOR BUSINESS PRINTING

330cps!



*$249 *Wide Carriage!*

- 330cps, 66cps NLQ
- WIDE carriage
- 2 year warranty

*THIS IS FACTORY RECONDITIONED & FULLY GUARANTEED

Panasonic Office Automation

KX-P1124

24-PIN Our Most Popular LQ Printer!

- 192cps, 63cps LQ
- 5 built-in LQ fonts
- 2 year warranty

*$199

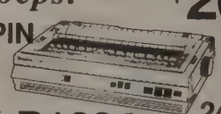
*THIS IS FACTORY RECONDITIONED & FULLY GUARANTEED

KX-P1524

- High speed WIDE Carriage
- 240 characters per second
- Super letter quality

240cps! *$209

24-PIN



KX-P1624 24-PIN

- 192cps, 63cps LQ
- 5 built-in LQ fonts
- 132 column • 2 year warranty

*$259

*THIS IS FACTORY RECONDITIONED & FULLY GUARANTEED

Sales Hotline 408-247-4444

Technical Support 408-247-4990

Other Inquires 408-247-4444 Fax 408-247-4448

Corporate Sales 408-247-1908

Not responsible for typos / Price subject to change w/o notice / Price good thru 5/10/92

Shop At ACCESS!

Excellent selection on all your PC needs!

Panasonic Office Automation

MAC & IBM COMPATIBLE

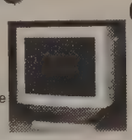
C1381i
14" Super VGA Color Monitor Interlaced
$329
• Super VGA Monitor
• .28mm dot pitch
• 1024x768 resolution

C1395
14" Multi-Frequency Color Monitor Non-Interlaced
$449

20" C1991 1280x1024 $1599

SONY
14"CPD-1304S
NON-INTERLACED
Low Radiation!
$577
70Hz Refresh Rate!
• 1024x768 resolution • .25 dot pitch
• 14" Trinitron tube • Built-in tilt/swivel base

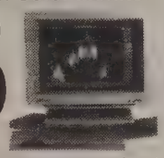
IBM & MAC Compatible!



17" CPD-1604S
Low Radiation Monitor!
$1099
• Up to1024x768
• .25 mm dot pitch
• 17" Trinitron VGA
• 30-57 kHz scan frequency
• Analog RGB input

20" GDM1936
NON-INTERLACED
$2499
• 1280x1024 resolution • .30 dot pitch
• 20" Trinitron tube • Built-in tilt/swivel base

NANAO
20" Flexible Scanning WorkStation Color Monitor
IBM & MAC Compatible
9500
$1799
• VGA up to 1280x1024
• .031 dot pitch
• Built-in Tilt/Swivel Base



9070U	16" .28mm, 1024x768	$889
9080i	16" .28mm, 1280x1024	1049
T560i	17" .25mm, 1280x1024	1899

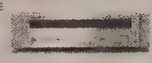
ViewSonic™ Monitors

1	14" .39mm, 640x480	$249
4E	14" .28mm, 1024x768	329
5E	14" Non-Interlaced .28mm	449
6	14" Non-Interlaced .28mm	389
7	17" .28mm, 1280x1024	1199
8	20" 1280X1024 .31mm	1699

Monthly Special

Procom Technology, Inc.

External CD-ROM System
IBM, AT & XT compatible
Software Titles include:
• National Geo's Mamma
• Illustrated Encyclopedia
• Reference Library
• US & World Atlas



$477
PXCD650S
• 650MB Information
• Includes 4 large software titles
• Stereo audio output
• Interface card, cable & drivers
• 1 year limited warranty

Bargain Corner

ATARI
Brand New! 9-Pin Printer
IBM & Atari Emulation!
$39
90 Day Warranty!

MaxLogic by **EVEREX**
2400bps Internal Modem
New!
$38.99
90 Day Warranty!

FREE Start-Up Kit!
One- Month FREE No Risk Membership W/ Modem Purchase!
PRODIGY. Interactive Personal Service

Hard Drives

COMMER

3044	40MB	25ms	$209
30084	80MB	19ms	299
30104	119MB	19ms	339
3204	200MB	19ms	589

Western Digital

AC280	80MB	18ms	$299
AC2120	120MB	15ms	359
AC4200	200MB	15ms	599

Modems

US Robotics
Courier 9600 14,400bps V.32/V.32bis External $569
Sportster 9600bps V.32 Internal $398
Courier Dual Standard 9600 14,400bps External $789

EVEREX
FAX MODEM
2400Modem/9600 Fax
Int/Ext $199/265

VGA Cards

ORCHID
Fahrenheit 1280°
Windows Accelerator
10X Faster than Super VGA!
Max res up to 1280x1024 $269
• 32,768 colors at 640x480
• 1MB w/Sierra Chip Set

ProDesigner IIs
• 32,768 colors at 640x480
• 1MB w/Sierra Chip Set
• Max res up to 1024x768
$169

Diamond Stealth VRAM 1MB 299
Oak AVGA 800x600 256K $49

SONY®
LASER LIBRARY™
External CD-ROM System
New Lower Price!

$499
• 640MB Storage
• Large Software Collection
• 6 Educational Software Packages
• 1 year limited warranty

EVEREX
TEAC
Internal TAPE BACK-UPS
40MB 4 Times FASTER than Colorado Drives! 60MB
$299 $389

MX MACRONIX, INC
MaxLite Portable Fax Modem
144/PC 14,400bps

$419
• 14,400bps Send/Receive fax & data
• V.42/MNP5 & V.42bis/MNP5
• ASCII, PCX & TIFF to fax format conversion
MaxLite 24/9600bps $229

New!
AT 2FD/2HD
MFM Controller
$14.99
EVEREX 90 Day Warranty!

TEC *plus*
Serial 3-Button Mouse W/ Pad
$12.99

IBM PS/2
Internal 1200 Modem
Your Choice $9.99

Deluxe JoyStick

ACCESS
COMPUTER TECHNOLOGIES
"A Little Bit Better"

2225 EL CAMINO REAL SANTA CLARA, CA 95050

Making Sense Of CD-ROM

Technology And Confusion—An Attempt To Shed Light On The Issues

BY MATTHEW LEEDS

The International Conference & Exposition on Multimedia and CD-ROM took place at Moscone in March of this year. Amid the rehash of digitized NASA photos available on CD, the clip art scans of wood and metal, and the literature CDs with 300 books you wouldn't read in paperback, it was hard to find much compelling software; the stuff that would drive end-users to purchase the requisite CD-ROM drive (and in some cases additional memory and/or sound card) that the new software often requires.

However, I'm convinced that such software is coming, evidenced by those few existing titles that do take advantage of this medium's features. Quite soon, the issue for end-users will be not "Should I buy a CD-ROM drive?" but "Which one should I buy?" Underlying that decision are a few knotty technical questions that drive manufacturers are still struggling with.

SPEED

The current crop of CD-ROM drives shares a common heritage with CD-Audio drives. Their data transfer rate is fixed at approximately 150K/sec. This is because CD-ROM drives spin at the same speed as CD-Audio drives. They cost more because they have beefier head servo systems and more electronics. The additional electronics provide more error correction and a computer interface. The stronger head servo is required to handle the constant random access requirements of data access and to improve the average access time (time to seek across one-third of the disc's surface).

Now two new technologies are about to change the CD-ROM drive world. These are multi-speed drives and multi-session drives. The first offers a faster data transfer rate; the second will be required to fully utilize Kodak's Photo CD.

Anyone who has used a CD-ROM product knows (and has probably uttered) the oft-heard comment "But why is it so *slow*?" Current CD-ROM drives transfer data at floppy drive speeds. To improve the data transfer rate you must spin the disc faster.

The first company (and the only one currently shipping) to offer a drive with this capability was NEC with the M series drives. These drives double the rotational speed of the disc, and the data rate is consequently doubled to 300K/sec. When the drive encounters a CD-Audio track, it slows down to normal speed. This is fine for those instances when you use the CD-ROM drive as an audio player, since it will stay at the normal speed for the entire disc, but on a mixed mode disc (one with both data tracks and CD-Audio interleaved) the speed changing introduces a delay each time the drive must speed up or slow down.

Sony announced a double-speed drive at the Expo. The CDU-561 was still in prototype form, but seemed to work fine. I spoke to a Sony engineer from Japan about Sony's strategy for handling the multi-speed switching issue. He explained that the Sony drive defaulted to the double-speed mode, but could be switched to normal speed via a software command. He assumed that all applications that needed normal speed mode would just issue the appropriate command. When I asked about the existing base of software, he paused, thought a moment, then said that they would probably include a utility to switch the drive's speed. Clearly not all of the issues have been thought through.

It is possible to buffer the CD-Audio data as it comes from the disc on a double-speed drive and play it out at normal speed. While no CD-ROM drive manufacturer currently offers this capability, Sanyo/Fisher has shown an audio CD player that uses this technology. They use it to buffer disc reads against shock, allowing playback without skipping in a car or while walking with a CD-Audio player. The buffer is a 4MB block of RAM. This type of buffer, coupled with a switching circuit that only buffered CD-Audio data, would eliminate the need for speed switching in a double-speed drive.

PHOTO CD

Unless you've been living in a cave, you have probably heard of Kodak's Photo CD system by now (see story this issue). Scheduled for consumer rollout this summer, Photo CD will provide photographers a way to get their photos digitized and stored on a CD. Kodak and several other companies will offer players for the home that will display images from a Photo CD disc on a television. You can also have prints produced from a Photo CD. Photo CDs can store up to one hundred images per disc, and they don't all have to be written to the disc at once. Photo CD discs support a new format called multi-session.

While this is good news for photographers, none of the existing CD-ROM drives can read any but the first session of a multi-session disc, and some can't read a multi-session disc at all. This is because Phillips, which provides Kodak with the CD-ROM technology behind Photo CD, decided to use a CD sectoring scheme used in CD-I called Mode 2. Current CD-ROM drives use Mode 1 sectoring.

No one is certain which, if any, of the current drives will be upgradable to support multi-session discs. This is a very hot topic now. When I asked in the Toshiba booth if there would be an upgrade path for their current drives, I was asked to wait while the only person authorized to discuss this with the press was fetched. His answer was a guarded "Maybe." It wasn't until later in the Kodak booth that I found a press release about the Toshiba XM-3301BK drive, proclaiming it to be Photo CD-compatible.

After some additional digging, I was told by a representative of a company that develops CD-ROM drive driver software that it will be possible to upgrade some drives just by using new driver software. Some drives may require a firmware upgrade, and not all manufacturers will offer them. In fact, the firmware in many drives is not easily upgraded, since the ROM chip is soldered in rather than socketed. It seems that many drive manufacturers view this as an opportunity to force users to buy new drives.

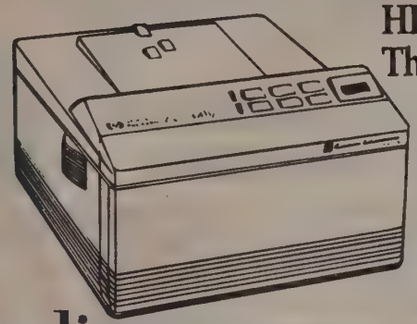
Getting a drive that can read Photo CD discs is only part of the puzzle. The Photo CD data structure is also new. Before the Expo it appeared that every application was going to have to roll Photo CD file format support in directly. At the Expo, Apple and Kodak announced that Apple will be releasing a new version of QuickTime that can directly read the Photo CD file format.

This new version of QuickTime offers three features: It turns a Photo CD image into a PICT file transparently when you access the file; it provides color thumbnails in the form of file icons for Photo CD files; and it produces a QuickTime slide show of all of the images on a Photo CD disc. Apple's decision to provide this support should put tremendous pressure on Microsoft to provide the same support, either as part of the Microsoft CD-ROM extensions, or as a future feature of MS-DOS. ■

RESOURCES:
For the latest information on drive compatibility you can call Kodak toll-free at 1-800-242-2424 ext. 53.

Copyright © 1992 by Matthew Leeds. All rights reserved.

MAC @ Fry's ELECTRONICS



HP LaserJet IIIP PostScript printer with AppleTalk. The best print quality in a compact printer.

While the HP LaserJet IIIP PostScript printer may not be big in price or size, it's quite another story when it comes to print quality. When you look at the printed product, it's clear that this 4-page-per-minute printer towers over everything else in its price range. #1616754

$1749

radius FULL PAGE COLOR PIVOT MONITOR

Color Pivot 8-Bit/ Full-Page 82dpi, • Actual Size 72 dpi For Macintosh

$1299

#1584534

PLI 3.5" FLOPTICAL MAC

21MB FLOPTICAL MEDIA READS/WRITES 1.4 ALSO INCLUDES 1 MEDIA

$549.95

#1661318

PLI 52MEG MINI MAC QUANTUM HARD DRIVE

52MB MINI SCSI MAC HARD DRIVE
17 MSEC ACCESS TIME
#1661259

$399.95

PLI 3.5" 128MEG MAGNETS - OPTICAL DRIVE FOR MACINTOSH

RE-WRITABLE SONY DRIVE; SCSI INTERFACE INCLUDING 1 MEDIA
#1661330

$1699

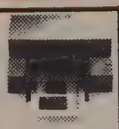
vision:logic 40MB EXTERNAL POCKET-SIZED HARD DRIVE

Ultra Compact Size(Poqet) 1x3x5" size; less than 12 ounces;23MS; 1.5 Watts

$399.95

#1617504

HEWLETT PACKARD DeskWriter C Printer



COLOR INKJET OUTPUT AT 300 DPI!
Prints in Color or Black and White
Appletalk Interface; 100 Sheet Paper Feeder; Whisper Quiet
3 Year Warranty

$778

#1616868

OLYMPIA IMAGEWRITER II

Compatible printer for Apple IBM computers. Serial, Parallel

$359.90

#1555617

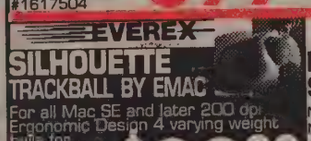
LOOK MA, NO HANDS SCANS! SCANNER FOR MAC

Captures 16 million colors in one pass 17 resolution settings. size alterations from 50% to 200%. Includes Scan Do/DA Software.

$699

#1608591

EVEREX SILHOUETTE TRACKBALL BY EMAC



For all Mac SE and later 200 dpi Ergonomic Design 4 varying weight pulls for Differential Sensitivity

$99.99

#1652660

PROXIMA POWER TOUCH SURGE PROTECTOR

Maximum energy dissipation 240 joules
Maximum clamping voltage 396 volts
4 outlets

MODEL PT10
#1621464

$49.95

PhoneNET Compatible DB9 CONNECTOR BOX

ENHANCE Cable Technology

$14.95

#1454095

datadesk 101 Key MAC KEYBOARD

For Mac SE,SE30, Mac II

$149

#1596481

National Semiconductor NSC EtherNODE - 16 MAC SE • Coaxial NB-EN16SE

$269

#1584198

NORTON UTILITIES MACINTOSH

Ideal for daily use with powerful desk accessories and control panel devices, unbeatable disk and data recovery... extraordinary performance!

$82.99

#1505771
MAC

Microsoft Word 5.0 For Macintosh

Discover the biggest thing to happen to business documents since the typewriter. Now it's a snap to mix text, graphics, images, data and create tables.

$319.99

#1658013

SimAnt Broderbund

The Electronic Ant Colony! You can control an ant colony, fighting another colony for control of a suburban backyard. You must also overcome spiders, ant-lions lawn mowers, and pesticides to achieve your goal of driving the humans out and taking over the house.

$39.95

MAC
#1641633

Quicken Intuit Version 3.0 for MAC HOME BUDGETING & CHECKING SOFTWARE

End Financial Hassles with the World's Best Selling Financial Software.

$42.95

#1619780
MAC

Microsoft Flight Simulator 4.0

This is the world's most popular flight adventure. It comes with everything you need to create an authentic flight experience-great planes, great scenery, and unpredictable weather to fly in as you wing your way to one of 125 airports.

$44.95

#90618

Home of Fast, Friendly, Courteous Service

ELECTRONICS Fry's

Prices good through May 5, 1992

Limit Rights Reserved
Not Responsible For Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND MASTERCARD

CORPORATE P.O. FAX #

SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

16MHz 386SX

DESKTOP SYSTEM

80386SX 16MHz CPU
1MB RAM Expandable to 16MB
5 1/4" 1.2MB Floppy Disk Drive
IDE 2 Hard/2 Floppy Disk Controller
Clock/Calendar
101-Key Keyboard
#1670516

$299

40MHz 386

TOWER CASE

64K CACHE EXPANDABLE TO 256K
WRITE BACK CACHE • OPTI CHIP SET

80386 40MHz • 80387 Socket
1MB RAM Expandable to 32MB On Mother Board
5.25" 1.2MB Floppy Disk Drive
IDE 2 Hard/2 Floppy Disk Controller
Clock/Calendar •101-Key Keyboard
#1596540

$499

33MHz 486

TOWER CASE

64K CACHE EXPANDABLE TO 256K
WRITE BACK CACHE • OPTI CHIP SET

80386 40MHz
1MB RAM Expandable to 32MB On Mother Board
5.25" 1.2MB Floppy Disk Drive
IDE 2 Hard/2 Floppy Disk Controller
Clock/Calendar •101-Key Keyboard
#1647499

$799

25MHz 386SX

60MB SVGA SYSTEM

WITH 14" 1024 X 768 COLOR MONITOR

80386SX 25MHz CPU • 80387SX Socket
5 1/4" 1.2MB Floppy Disk Drive
1MB RAM Expandable to 16MB
2 Hard/2 Floppy Disk Controller
60MB Hard Disk Drive
101-Key Keyboard • Clock/Calendar
SVGA Graphics Card • SVGA Monitor
#1671724

$999

EPSON

WHEN YOU'VE GOT AN EPSON YOU'VE GOT A LOT OF COMPANY

NB-SL/20
20MHz 386SL
40MB NOTEBOOK

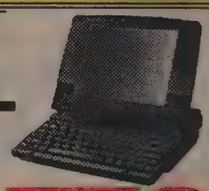
NEW "SL" CHIP w/LOW POWER MANAGMENT CAPABILITIES!

20MHz 80386SL CPU • 40MB Upgradeable Hard Drive
3.5" 1.44MB Floppy Disk Drive • 1MB RAM
VGA Output • Serial/ Parallel Ports
Low power consumption "SL" chip up to 6 hrs. use.
Epson On Road 24hr Response Service
#174691

$2799

Avanti 025

25MHz 386SXL
62MB NOTEBOOK



25MHz 386SXL CPU
2MB RAM Expandable to 8MB
62MB Hard Disk Drive
Fax Send and Receive Modem
3.5" 1.44MB Floppy Drive
High Contrast 10 Inch LCD
Advanced Power Management
Unique Pivoting Screen Saves Space • DOS, Windows
Carrying Case #1660937

$2779

MOTHER BOARDS

25MHz 386SX — **$179**
ØK RAM EXP. TO 16MB
#1634334

33MHz 386DX — **$349**
64K CACHE EXPT. TO 256
ØK RAM EXP. TO 32MB
#1649468

33MHz 486DX — **$699**
64K CACHE EXPT. TO 256
ØK RAM EXP. TO 32MB
#1650174

WESTERN DIGITAL

60MB IDE HARD DRIVE

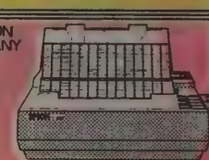
2.5" Size
15 msec FastAccess
Mounting Sold Separately
1671263

$269.95

EPSON

WHEN YOU'VE GOT AN EPSON YOU'VE GOT A LOT OF COMPANY

FX-850
80 COLUMN DOT MATRIX



80 Column • 264 CPS Draft 54 CPS NLQ
SelecType Front Control
SmartPark Feature • Tractor Feed
Two Year Warranty
#1292515

$319

EPSON ActionPrinter 3250

WHEN YOU'VE GOT AN EPSON YOU'VE GOT A LOT OF COMPANY

24 PIN PRINTER

50 Sheet Paper Cassette Tray
Quiet • ESC/P2 Control Language
Simple Control Panel
Two Year Warranty
Model
AP-3250
#1667299

$239

Charlie Chip Says:
"Your Best Computer Buys Are Always At...

Fry's ELECTRONICS

DISKETTE CORNER

PREMIUM DISKETTES
5.25" DS/HD
HI-DENSITY
DISKETTES
FORMATTED
44¢EA
Sold in Packages of 25 for $11.00
#1612428

DISKETTES
5.25" DS/HD
HI-DENSITY
DISKETTES
With Labels, Tyvek Sleeves
And Write Protect Tabs
Lifetime Warranty
39¢EA
Sold in Packages of 25 for $9.75
#1489561

GoldStar
16" 1620 PLUS
1024 X 768
.29 DOT PITCH
NON-INTERLACED
VGA MONITOR
1024 X 768/800 X 600
640 X 480 Non-Interlaced
.28 Dot Pitch
One Year Warranty
#1555984
$779

1280 X 1024 OAK SUPER VGA CARD
1024 X 768 - 256 COLORS
1280 X 1024 - 16 COLORS
1MB RAM
Infinity VGA OAK #1657540
$99.95

1024 X 768 14" VGA NON-INTERLACED MONITOR
1024 X 768
.28 Dot Pitch
Interlaced
One year
Warranty
#1645206
110V/220V
By Infinity
$349.95

National Semiconductor
COMPUTER ENHANCEMENT GROUP
EtherNODE TPA
Converts Existing
Coax Ethernet to
Twisted Pair
Ethernet
Simple Plug & Play
10 Base T Compatibility
#1584187
$99.95

80486 EISA MOTHER BOARD
Intel 33MHz microprocessor with on-chip 8K cache and floating point unit • Weitek 4167 coprocessor socket • 8 32-bit EISA-compatible slots • 6 slots available for bus masters • 32-bit expandable from 4MB to 64MB on system board • 8K bytes internal cache • 64K, 128K or 256K second level direct mapped cache • Norton SI 4.0 Landmark v1.14 (MHz) Power Meter v1.3 (MIPS) KWhetstones
#1610895
$1295

NUVO TEL 24001 BAUD INTERNAL MODEM
NUVO TEL 2400 Baud Modem
Internal / Rockwell Chipset
QuickLink II Software
Non Volatile Memory
#1626023
$39.95

TEXTUAL TRANSFERENCE TECHNOLOGY
SCANMAN - 32/OCR
LOGITECH
400 DPI Resolution
Scans in 32 True Shades of Grey, 256 with software enhancement
Includes Catchword, Logitech's hassle-free Optical Character Recognition Software
#1594892
$169.95
*After Manufacturer Rebate.
In Store Cost $194.95

TELE-COUPLER
BY KONEXX
FOR THE "ON THE ROAD" MODEM USER!
Connect your modem to any telephone and Transfers data at high Baud rates.
#1658404
$129.95

MOUSE SYSTEMS OMNIMOUSE
OPTO-MECHANICAL MOUSE
200 DPI Resolution Adjustable from 200-6400 DPI
2 Button Serial
Fully Microsoft Mouse Compatible
Ballistic/Optomechanical
#1633160
$24.95

RETINAL RELIEF ANTI-GLARE FILTERS
Cuts ultraviolet and daylight reflection
Enhance screen sharpness and contrast
#1620234 For 12" Color Monitor $8.95
#1620245 For 12" Mono Monitor $7.95
#1620212 For 14" Color Monitor $9.95
#1620223 For 14" Mono Monitor $8.95

LOGITECH TrackMan Portable
Turns Any Space Into Workspace
Small, lightweight, ergonomic.
For right- or left- handed use.
100% Microsoft™ compatible.
#1620256
$84.95
*After Manufacturer Rebate.
In Store Cost $94.95

TOSHIBA SCSI CD-ROM
SCSI CD-ROM IBM
32MS Access • Full Audio Auto Lens Clean With Interf • IBM Compatible Systems
#1659623
$669.95

Avoid System Meltdown
PROLINE 10 SIX OUTLET SURGE PROTECTOR
For IBM, Apple & Printers
240 Joules Energy Dissipation
5 Year Warranty
#1483842
$22.95

PROTECT YOUR INVESTMENT
Qualtec
PC SECURITY LOCK-KIT 5B
2-3.5" X 4" Metal Mounting Plates
5' Vinyl Covered Cable and Padlock
#1618354
$19.95

Suncom TECHNOLOGIES
Analog XTRA JOYSTICK
4 Fire Buttons
Variable Auto-Fire Rate
Throttle Control #1598830
$34.95

GET THE KEYBOARD WITH THE "ORIGINAL CLICK!"
AT/XT 101- KEY KEYBOARD
CABLE MANAGEMENT BUILT IN USER SELECTABLE LEFT, RIGHT OR CENTER CABLE EXIT
#1619986
$29.95

LOADSTAR POCKET LAN ADAPTER
10MBPS 8KB RAM Network Buffer
Thin Wire IEEE
802.3 Parallel port
#1658459
$189

Give Your Mouse a Place to Roam
MOUSE PAD
9" X 8" Pad With Fry's
Logo Imprinted
In Assorted Colors
#1551750
$2.99

HOME OF FAST, FRIENDLY, COURTEOUS SERVICE

Fry's ELECTRONICS

Limit Rights Reserved
Not Responsible For
Typographical Errors

Prices good thru
May 5, 1992

STORE HOURS
MON - FRI
8AM - 9PM
SATURDAY
9AM - 8PM
SUNDAY
9AM - 7PM

SUNNYVALE 1177 Kern Ave. (408) 733-1770
CORPORATE P.O. FAX # (408)735-6800

PALO ALTO 340 Portage Ave. (415) 496-6000
CORPORATE P.O. FAX # (415) 496-6060

FREMONT 440 Mission Ct. (510) 770-FRYS(3797)
CORPORATE P.O. FAX # (510) 770-3700

VISA
MasterCard
VISA and MasterCard Accepted

MORE COMPUTER BUYS FROM FRY'S!

50MHz 486
4MB RAM EXPANDABLE TO 64MB
1 GIGABYTE SCSI HARD DRIVE

1 GIGABYTE HARD DRIVE
FILE SERVER • 80486 50 MHz CPU
400 WATT POWER SUPPLY
3 FANS • 1.2MB 5.25" FLOPPY DISK
9 HARD DRIVE BAYS
101-KEY KEYBOARD #1676419

$4195

16MHz 386SX
60MB COLOR SVGA SYSTEM

80386SX 16MHz CPU
1MB Expandable to 16MB
60MB Hard Drive
5.25" 1.2MB Floppy Disk Drive
IDE 2 Hard/2 Floppy Disk Controller
101-Key Keyboard
14" 1024 X 768 SVGA Display
1024 x 768 VGA Adapter
Clock/Calendar #1672459

$899

20MHz 386SX 80MB NOTEBOOK

80386SX 20MHz CPU
2MB RAM • 80MB Hard Drive
VGA Display
External 3.5" 1.44MB Floppy Disk Drive
1 Parallel & 1 Serial Ports • Extra Light Weight

SUPER LIGHT WEIGHT! ONLY 4.5 lbs!

$1999

#1639188

MITAC

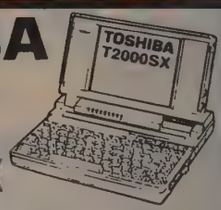
20MHz 386SX 60MB NOTEBOOK

3.5" 1.44MB Floppy Disk Drive • 2MB RAM
60MB Hard Drive • Serial/Parallel Ports
VGA Graphics • MS-DOS • Super Twist LCD Screen

$1599

#1620625

TOSHIBA T2000SX 40MB NOTEBOOK



INTEL 80386SX CPU 16MHz
Socket for 80387SX • Real Time Clock/Calendar
1MB RAM Expandable to 9MB
40MB 25ms Hard Drive • 3.5" 1.44MB
Floppy Disk Drive • Fluorescent Sidelit LCD
Display VGA Monitor Port • 6.9 lbs. With Nickel
Hydride Battery • Serial/Parallel Ports

$1799

#1546855

US Robotics

SPORTSTER 9600E EXTERNAL MODEM

V.32, V.42, V.42bis
9600 Baud External Modem
US Robotics #0035-00 #1638992

$399.95

1024 X 768 NON-INTERLACED 16" SVGA LARGE MONITOR

1024 X 768
High Resolution VGA • .29 Dot Pitch
Tilt and Swivel Base • Non-Interlaced
#1655984

$779

ATI VGA WONDER XL

1MB RAM•1024 X 768
Up to 260,000 Colors
Also 32,256
Color Mode
By Infiniti
#1657551

NEW! UP TO 260,000 COLOR MODE!

$189.95

LOADSTAR

PORTABLE ETHERNET ADAPTER

10MPS 8KB RAM Network
Buffer Thin Wire IEEE
802.3 Parallel Port

$189

#1658459

3M DATA CARTRIDGES DC 6150

150MB • Unformatted
1/4 inch • Lifetime Warranty

$17.95

#1623695

HEWLETT PACKARD
Authorized Dealer

LASER TONER CARTRIDGE FOR HP IIP & IIIP LASER PRINTERS

92275A #1481426

$66.98

80MB 5.25" HARD DRIVE

28ms Access MFM
5.25" Form Factor
Seagate
Model ST4097 #1672448

$289.95

EXPONENT
The Media Storage Solution...

MODULAR STORAGE UNITS USED INDIVIDUALLY OR STACKED IN COMBINATION
Holds: Disks, BackUp Tapes, Audio Cassettes, Compact Discs, MicroFilm & MicroFiche

$39.95

#1562271

SPACE SAVING SOLUTION!

MobileManager™ PC Workstation

Work Manager Desk
With Keyboard Drawer
27" Long,
31" High
On Casters
Larger Sizes
Also In-Stock

MicroComputer Accessories, Inc.

$129.95

#1652567

Home of Fast, Friendly, Courteous Service

ELECTRONICS Fry's

Prices good thru May 5, 1992

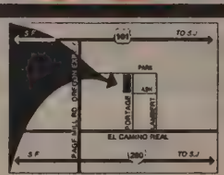
Limit Rights Reserved
Not Responsible For Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

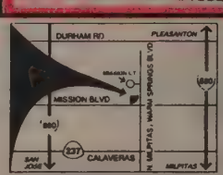
VISA AND MASTERCARD

CORPORATE P.O. FAX # (408)735-6800

SUNNYVALE
1177 Kern Ave.
(408) 733-1770



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

TOSHIBA
Notebooks & Laptops

T1000LE
NOTEBOOK
Intel 80C86 9.54MHz CPU
3.5" 1.44MB Floppy Drive
20MB 23ms Hard Drive
1MB RAM Expandable to 9MB
Serial/Parallel Ports • Clock/Calendar
MS DOS 3.3 • 6.5 lbs Lightweight Notebook
#1546833

$1299

T2000SX
40MB 386SX VGA NOTEBOOK
INTEL 80386SX CPU 16MHz
Socket for 80387SX • Real Time Clock/Calendar • 1MB RAM Expandable to 9MB
40MB 25ms Hard Drive • 3.5" 1.44MB Floppy Disk Drive • Fluorescent Sidelit LCD Display VGA Monitor Port • 6.9 lbs.
Nickel Hydride Battery Serial/Parallel Ports

NEW LOW PRICE

$1799
#1546855

T2000 286 40MB VGA NOTEBOOK
INTEL 80286 CPU 12MHz
Real Time Clock/Calendar
1MB RAM Expandable to 9MB
40MB 25ms Hard Drive • 3.5" 1.44MB
Floppy Disk Drive • Fluorescent Sidelit LCD
Display VGA Monitor Port • 6.9 lbs.
Nickel Hydride Battery • Serial/Parallel Ports

$1599
#1608605

T2000SXe
20MHz 386SX 60MB NOTEBOOK
INTEL 80386SX CPU 20MHz • Socket for 80387SX
Real Time Clock/Calendar • 2MB RAM Expandable to 9MB
60MB 25ms Hard Drive • 3.5" 1.44MB Floppy Disk Drive
Fluorescent Sidelit LCD Display • VGA Monitor Port
6.9 lbs. With Nickel Hydride Battery • Serial/Parallel Ports

$2399
#1608649

20MHz 386SX NOTEBOOK T2200 SX/80
Small Compact Size 5.5lbs Only!
INTEL 80386SX CPU 20MHz
Socket for 80387SX
Real Time Clock/Calendar
2MB RAM Expandable to 10MB
80MB 25ms Hard Drive
3.5" 1.44MB Floppy Disk Drive
Fluorescent Sidelit LCD Display
VGA Monitor Port
6.9 lbs. With Battery
Nickel Hydride Battery
Serial/Parallel Ports

$2999
#1650624

T2000SXe
20 MHz 386SX 40MB HARD DRIVE NOTEBOOK
INTEL 80386SX CPU 20MHz
Socket for 80387SX • Real Time
Clock/Calendar • 1MB RAM • 40 MB Hard Drive
3.5" 1.44MB Floppy Disk Drive • Fluorescent Sidelit LCD Display
VGA Monitor Port • 6.9 LBS. With Battery
Nickel Hydride Battery • Serial/Parallel Ports

$2199
#1608638

T3200SXC
120MB COLOR LAPTOP
80386 20MHZ CPU
1MB RAM • 120MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
VGA Gas Plasma Display
VGA Simultaneous Viewing
Color Active Matrix LCD
Serial/Parallel Ports
MS DOS • Clock/Calendar
#1546866

REAL LIFE 256 COLORS ON GAS PLASMA ACTIVE MATRIX SCREEN! NOW WITH HOT PRICE!

$5699

25MHz 486SX NOTEBOOK T4400SX 80MB
INTEL 80486SX CPU 25MHz
Real Time Clock/Calendar • 2MB RAM Expandable to 10MB
60MB 25ms Hard Drive • 3.5" 1.44MB Floppy Disk Drive
Fluorescent Sidelit LCD Display • VGA Monitor Port
6.9 lbs. With Nickel Hydride Battery • Serial/Parallel Ports

$4499
#1647411

T5200
80386 CPU at 20MHz
100MB Hard Disk
High-Resolution Gas Plasma Display Supports Built-In VGA Compatibilities
2MB RAM Expandable to 8MB
Two Internal IBM Compatible Expansion Slots
1.44MB Floppy Drive • Serial/Parallel
#1498895

$3888

Home of Fast, Friendly, Courteous Service

FRY'S ELECTRONICS

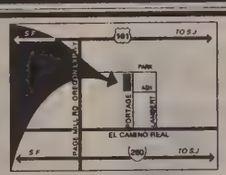
Prices good thru May 5, 1992

VISA AND MASTERCARD

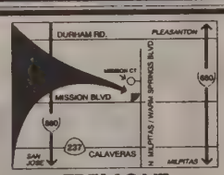
HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

Limit Rights Reserved
Not Responsible for Typographical Errors
Corporate P.O. FAX# (408) 735-6800

SUNNYVALE
1177 Kern Ave.
(408) 733-1770



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS(3797)
(510) 770-3700

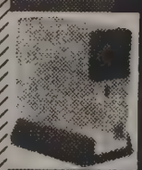
COMPUTER PERIPHERALS, INC.™

ViVa MODEM 24m

2400 BAUD HOOK-UP INTERNAL

2400/1200/300 Baud
Hayes Compatible Modem
1/2 Card PC/XT/AT
Model 44-502-102 #162332

$49.95



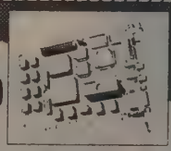
2400 BAUD MAC EXTERNAL MODEM

ViVa MODEM 24m

Tower Design • Hayes Compatible
5 Year Warranty
Comes with Software and Cables
#1478121

$99.95

9600 FAX 2400 BAUD MODEM INTERNAL CARD



9600 Baud/Fax • 2400 Baud
Internal Modem PC/XT/AT Compatible
Non-Volatile Memory
Model 44-502-706 2496IF #1579385

$99.95

2400 BAUD EXTERNAL MODEM W/ SEND FAX

ViVa MODEM 24m

44-502-504
External Modem 2400
with Send Fax #1491821

$99.95

2400 BAUD EXTERNAL MODEM

FREE! Prodigy Start Up Kit

44-502501-000
2400 External Modem
Hayes Compatible W/ Software
#1622235

$79.95

ViVa MODEM 24m

9600 BAUD EXTERNAL MODEM

A 9600bps/V.32 Modem with V.42bis
The ViVa 9642e is a V.32, 9600 baud modem that means business. This high speed, full duplex modem has V.42bis and MNP4 error detection and correction. All this adds up to a maximum throughput rate of 38,400 bps, saving you time and money!

$369.95

#1572216

LASERJET MEMORY

OMB EXPANDABLE TO 4MB
FITS HP IIP, III, IIID
Model 44-560-409
#1551716

$64.99

HP LASERJET TAX FONT CARTRIDGE

FOR HP LASERJETS
Model 44-660-280 #1491588

$109

2MB LASERJET MEMORY

2MB Expandable to 4MB
Fits HP IIP, III, IIID
Model 44-560-420 #151052

$159

CPI ACTION SET

102 FONTS FOR MOST
PERIPHERAL LASER PRINTERS
#1667277

$99.95

CPI DESKJET

68 FONTS FOR THE
DESKJET 500
#1667266

$119.95

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

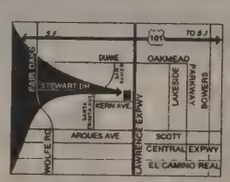
Prices good thru May 5, 1992

Limit Rights Reserved
Not Responsible For
Typographical Errors

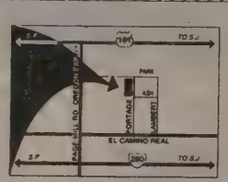
HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND MASTERCARD

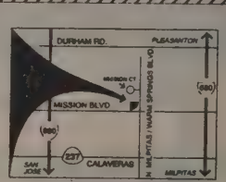
CORPORATE P.O. FAX # (408)735-6800



SUNNYVALE
1177 Kern Ave.
(408) 733-1770



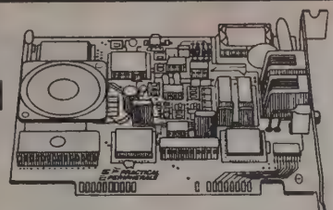
PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

SPEAKING PRACTICALLY

PRAC24I

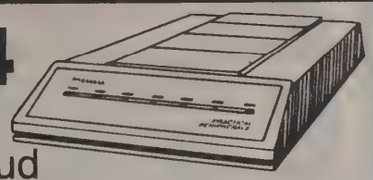


300/1200/2400 Baud
Hayes Compatible
Internal Modem

$89.95

#127792

PRAC24

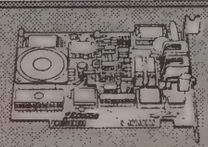


300/1200/2400 Baud
Hayes Compatible External Modem

$99.95

#116558

INTERNAL PM 2400 FAX 9600

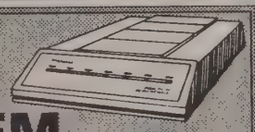


9600 Baud Group III Fax
2400 Baud Modem
Quick Link II Software
Internal 1/2 card
For IBM / XT / AT
& Compatibles

$99.95

#1605716

9600 BAUD EXTERNAL FAX 2400 BAUD MODEM



With Fax/Modem Software

$118.95

UP TO 4800BPS

#1657492

A PRACTICAL POCKET MODEM

2400 BAUD PORTABLE

With No-Fail Power

Hayes compatible Fits in your Pocket! IBM power from RS232 port and Phone Line. Also works with a 9 volt battery.

$99.95

#1525205

9600 BAUD EXTERNAL 9600SA V.32 &V.42

It works with V.32, V.22bis andV.22 or Bell 212 A modems to provide automatic speed adjustment. V.42bis data compression provides up to 4 to 1 compression rate and user definable dictionary sizes.Supports V.42 error correction. Supports both one-way and two-way compression. Compatible with MNP levels 2-5. Speed buffering with DTE rates up to 38,400 bps.

$399.95

#1525191

PM2400 V.42bis INTERNAL MODEM

The intelligent 2400 bps internal half-card modem with V.42 error control and V.42bis data compression.

UP TO 38,400BPS

V.42 error detection/correction and V.42bis data compression, supporting LAPM and MNP protocols.• Automatic adaptive equalization • Cuts down on errors • 0-300, 1200 and 2400 bps operation.

$139.95

V.42 BIS

#1447730

PM9600SA MAC

V.32/V.42bis
4 to 1
Compression
With
Smartcom 11
For MAC

#589540

$399.95

PROUDLY MADE IN THE U.S.A.

PRACTICAL PERIPHERALS®

PRACTICAL PERIPHERALS 5 YEAR GUARANTEE

MODEMS • BUFFERS • INTERFACES • IBM AND APPLE ENHANCEMENTS • MODEMS • BUFFERS • INTERFACES

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

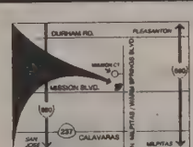
Limit Rights Reserved

Not Responsible For Typographical Errors

HOLIDAY HOURS

MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

SUNNYVALE
1177 Kern Ave.
(408) 733-1770



FREMONT
440 Mission Ct.
(510) 770-FRYS(3797)

PALO ALTO
340 Portage Ave.
(415) 496-6000

Prices good thru May 5, 1992

VISA AND MASTERCARD ACCEPTED

Parana®
SUPPLIES CORPORATION

Parana Printer Ribbons Make a Great Impression.™

RIBBONS FOR EPSON PRINTERS

201S $2.99
For Models FX850, MX80 Olympia NP30AL, NP80 #1595262

202S $3.99
For Models FX1050, MX100 #1595273

204S $4.99
For Models LQ1050, LQ1010, LQ1000 #1595675

205S $4.99
For Model LQ2550 #1611874

207S $14.95
For Models DFX-5000/8000 #1647341

208S $4.99
For Models EX800, EX1000 #1611885

RIBBONS FOR IBM PRINTERS

251S $3.99
For Proprinter #1595686

252S $4.99
For Proprinter XL #1611944

RIBBONS FOR PANASONIC PRINTERS

381S $5.99
For Models 1000, 1080, 1081, 1082, 1083, 1090, 1091, 1092, 1180, 1191 1592, 1593i #1595712

382S $5.99
For Models 1123, 1124, 1124i #1595723

383S $5.95
For Models 1624, 1695, #1647352

384S $5.95
For Model KXP-1524 #1647374

RIBBONS FOR OKIDATA PRINTERS

351S $5.99
For Models 180, 182, 192, 193, 194, 195, 320, 321 #1595697

352S $7.95
For Models 380, 390, 391 #1595701

RIBBONS FOR TOSHIBA PRINTERS

425S $4.49
For Models P321, 341, 351SX #1611852

426S $5.95
For Models P321SL, P341SL #1611863

RIBBONS FOR NEC PRINTERS

301S $6.95
For Models P2200, P2200XE #1611830

302S $6.25
For Models P5200, 5300 #1611841

RIBBONS FOR STAR PRINTERS

401S $4.49
For Models NX1000 Series #1595734

402S $7.49
For Model NX1020 #1662777

403 S COLOR $11.95
For Model NX1020 #1662788

RIBBONS FOR CITIZEN PRINTERS

131S $4.95
For Models 12D, 180D, GSX-140, GSX-200 BLACK #1595251

132S COLOR $14.95
For Model GSX-140 FOUR COLOR RIBBON #1662733

RIBBONS FOR IMAGEWRITER II PRINTERS

101S $2.99
BLACK #1595240

102S $7.99
COLOR #1662722

Combined With Fry's Low Prices, Parana Ribbons Are A Great Value!

Home of Fast, Friendly, Courteous Service

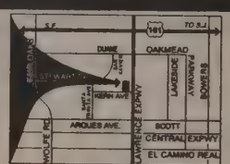
ELECTRONICS Fry's

Prices good through May 5, 1992

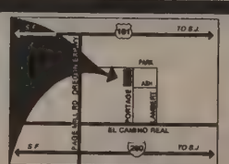
Limit Rights Reserved Not Responsible For Typogrphical Errors

STORE HOURS:
MON-FRI
8AM-10PM
SATURDAY
9AM-9PM
SUNDAY
9AM-8PM

VISA MasterCard
VISA AND MASTERCARD ACCEPTED
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800



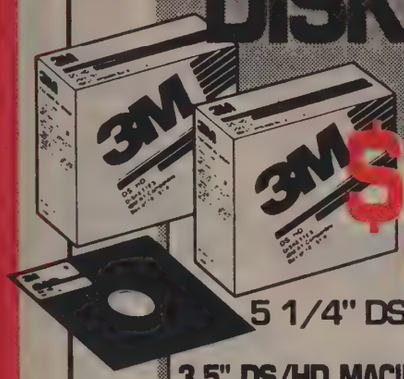
PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(415) 770-3700

3M DISKETTES

Save Dollars and Data

5 1/4" DS/HD HI-DENSITY DISKETTES



$9.99 BOX OF 10 #121330

5 1/4" DS/HD FORMATTED $10.69 (#1500341)

FREE SCOTCH XSII Premium Quality High (CrO2) Bias Audio Cassette On Specially Marked Packages of Diktettes

3.5" DS/HD MACINTOSH FORMATTED DISKETTES BOX OF 10 #1563308 **$16.99**

3.5" DS/DD MACINTOSH FORMATTED DISKETTES BOX OF 10 #1563294 **$8.99**

3.5" DS/HD HI-DENSITY DISKETTES

$14.49 BOX OF 10 #121327

3.5" DS/HD FORMATTED $15.99 (#1500329)

3.5" DS/ED 4.0 MB DISKETTES **$72.95** BOX OF 10 #1527908

5 1/4" DS/DD DISKETTES **$5.59** BOX OF 10 #87501

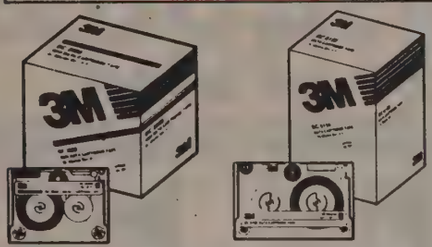
5 1/4" DS/DD FORMATTED $6.49 (#1500330)

STARTER KIT GIFT PACK

CRT, Printer and Drive Cleaning Kits
Anti-Static Strip
Mouse Pad • Plastic Disk Box
3.5" #1632734 • 5.25" #1632745

$19.95 A $60 VALUE!

DATA CARTRIDGES



DC 2000 Thetamat	#1495744	$19.95
DC 2120 Unformatted	#1490750	$20.49
Rhomat	#1490761	$27.95
Ximat	#1551381	$25.98
DC 2060 Kappamat	#1551417	$25.99
Thetamat	#1662180	$25.49
DC 2080 Unformatted	#11612521	$19.95
DC 6150	(#1405482)	$22.99
DC 600A	(#122433)	$21.99
DC 6320	(#1551532)	$28.99
DC 6250	(#1490819)	$26.99

HEAD CLEANING DISKETTES **$5.95** 3.5" #122330

HOME OF FAST, FRIENDLY, COURTEOUS SERVICE

Fry's ELECTRONICS

Limit Rights Reserved

Prices good thru May 5, 1992

STORE HOURS
MON - FRI 8AM - 9PM
SATURDAY 9AM - 8PM
SUNDAY 9AM - 7PM

SUNNYVALE 1177 Kern Ave. (408) 733-1770
CORPORATE P.O. FAX # (408)735-6800

PALO ALTO 340 Portage Ave. (415) 496-6000
CORPORATE P.O. FAX # (415) 496-6060

FREMONT 440 Mission Ct. (415) 770-FRYS (3797)
CORPORATE P.O. FAX # (415) 770-3700

VISA MasterCard VISA and MasterCard Accepted

GO FOR THE GoldStar

20MHz 386SX 124MB VGA BUNDLE

386SX-20MHz CPU
2MB RAM Expandable to 4MB on Motherboard
5.25" 1.2MB Floppy Disk • 3.5" 1.44MB Floppy Disk
124MB Hard Disk • 2400 Baud Internal Modem
Serial/Parallel/Mouse Ports
101-Key Sculptured Keyboard
800 x 600 .31 DPI Color VGA Monitor
Service Centers Worldwide
800 Toll-Free Technical Support #1616558

FREE SOFTWARE WITH GOLDSTAR COMPUTER:
Microsoft DOS 5.0, DOS Shell, Microsoft Windows 3.0, Spinnaker DOS Manager, GBASIC, System and Video Utilities, Splash Paint Program, PRO-SCAN Virus Protection, Goldstar Menu
PFS: WindowWorks: Word Processor • Spreadsheet • Database • Graphics Communications • Label Maker Address Book • Chart
Prodigy: Communication Package
One Month Free Service

$1495

1 YEAR ON-SITE SERVICE!

40MHz 386 124MB SVGA BUNDLE 1024 X 768 SVGA MONITOR

40MHz 80386 CPU
2MB RAM Expandable to 32MB on Motherboard
5.25" 1.2MB Floppy Disk • 3.5" 1.44MB Floppy Disk
124MB Hard Disk • 2400 Baud Internal Modem
Serial/Parallel/Mouse Ports • 101-Key Sculptured Keyboard
1024 x 768 .28 DPI Color SVGA Monitor
Service Centers Worldwide • 800 Toll Free Technical Support #1648962

FREE SOFTWARE WITH GOLDSTAR COMPUTER:
Microsoft DOS 5.0, DOS Shell, Microsoft Windows 3.0, Spinnaker DOS Manager, GBASIC, System and Video Utilities, Splash Paint Program, PRO-SCAN Virus Protection, Goldstar Menu
PFS: WindowWorks: Word Processor • Spreadsheet • Database • Graphics Communications • Label Maker Address Book • Chart
Prodigy: Communication Package
One Month Free Service

$1795

16MHz 386SX 40MB VGA BUNDLE

80386SX 16MHz CPU
40MB Hard Disk • 5.25" 1.2MB Floppy Disk
3.5" 1.44MB Floppy Disk
1MB of RAM Expandable to 32MB
3-Button Mouse •2400 Baud Internal Modem
101-Key Sculptured Keyboard
2 Serial/1 Parallel Ports • 5 Available Expansion Slots
14" .39mm Dot Pitch Extended VGA • 3031 Color Monitor
800 x 600 Resolution • Service Centers Worldwide
800 Toll-Free Technical Support #1616536

FREE SOFTWARE WITH GOLDSTAR COMPUTER:
Microsoft DOS 5.0, DOS Shell, Microsoft, Spinnaker DOS Manager, GBASIC, System and Video Utilities, Splash Paint Program, PRO-SCAN Virus Protection, Goldstar Menu
PFS: WindowWorks: Word Processor • Spreadsheet • Database Graphics • Communications • Label Maker • Address Book • Chart
Prodigy: Communication Package • One Month Free Service

DEMO UNITS
LIMITED STOCK

$999

33MHz 486 200MB VGA BUNDLE

486-33MHz CPU • 200MB Hard Disk
Intel 2nd Generation
Smart Cache System
Integrated Math Co-Processor
4MB RAM Expandable to 32MB on Motherboard
5.25" 1.2MB Floppy Drive • 3.5" 1.44MB Floppy Drive
2400 Baud Internal Modem • 3 Button Mouse
Serial/Parallel/Mouse Ports • 101-Key Sculptured Keyboard
1024 x 768 .28 DPI Color VGA Monitor
Service Centers Worldwide • 800 Toll-Free Technical Support #1647488

FREE SOFTWARE WITH GOLDSTAR COMPUTER:
Microsoft DOS 5.0, DOS Shell, Microsoft Windows 3.0, Spinnaker DOS Manager, GBASIC, System and Video Utilities, Splash Paint Program, PRO-SCAN Virus Protection, Goldstar Menu
PFS: WindowWorks: Word Processor • Spreadsheet • Database Graphics • Communications • Label Maker • Address Book • Chart
Prodigy: Communication Package • One Month Free Service

$2495

16" LARGE SCREEN 1024 x 768 SVGA MONITOR

1024 x 768 High Resolution VGA
.29mm Dot Pitch • Tilt and Swivel Base
Non-Interlaced Monitor

Model 1620 PLUS #1655984

$779

.39MM DOT PITCH 1026 X 768 14" SVGA MONITOR

1024 X 768/800 X 600/640 X 480
720 X 400/640 X 350
.39mm Dot Pitch • Non-Glare Screen
Model 3039 #1660524

$269.95

.28 MM DOT PITCH 1024 X 768 14" SVGA MONITOR

1024 X 768/800 X 600/640 X 480
720 X 400/640 X 350
.28mm Dot Pitch
IBM 8514/A Compatible

$319.95

Model 3028 #1660801

.28MM DOT PITCH 1280 X 1024 14" SVGA MONITOR

1280 X 1024/ 1024 X 768
IBM/MAC • .26mm Fine Dot Pitch
Model 1490 #1660812

$599.95

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Prices good through May 5, 1992

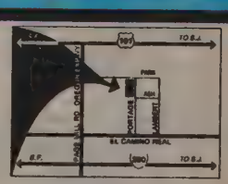
Limit Rights Reserved
Not Responsible For Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND MASTERCARD

CORPORATE P.O. FAX #

SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

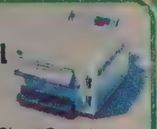
FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

IBM PRINTERS

LEXMARK Authorized Dealer

With POSTSCRIPT™ And Memory Upgrades, These New Lasers Do 600 x 600 DPI!

4029-010 PERSONAL LASER PRINTER



Print Quality Enhancement Technology Provides Resident SCALABLE Fonts!
1MB RAM • 4MB RAM Expansion • 100-Sheet Output
PCL4 Compatible • 5 Pages Per Minute • Optional PCL5 and POSTCRIPT™
200-Sheet Input
Optional 500 Sheet 2ND Drawer,
75 Envelope Feeder
1 Year Warranty
#1622638

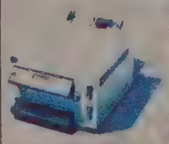
$1188

LASER 6 MODEL 4029-020 6 PAGES / MINUTE

200 Sheet Paper Cassette
Optional 500 Sheet Second Drawer
Optional 75 Envelope Feeder
100 Auxiliary Feeder
IBM Personal Printer Data Stream Language • HP PCL4 Compatible; Optional PCL5 • High-Speed Parallel/Serial Interfaces
Optional Appletalk™
#1622649

$1488

LASER 10 MODEL 4029-030 10 PAGES / MINUTE



200 Sheet Paper Cassette
Optional 500 Sheet Second Drawer
Optional 75 Envelope Feeder
100 Auxiliary Feeder
IBM Personal Printer Data Stream Language • HP PCL4 Compatible; Optional PCL5 • High-Speed Parallel/Serial interfaces -Optional Appletalk™

$1788
#1622650

LASER PRINTER MODEL 4029-040

16.7 MHz Mortorola 68020 Processor
HP PCL-4; PCL-5 Opt;
250 Sheet Output
High-Speed Compatibility With All IBM Platform and Apple™ Networks

700 SHEET INPUT TRAYS STANDARD

$2299
#1622661

LASER PRINTER

NEED HIGH SPEED, HIGH PRODUCTION?
Model 4019 • 700 Sheet Capacity with optional 2nd Drawer! 10 Pages/Minute! • HP LaserJet II Compatible
BEST PAPER HANDLING IN THE BUSINESS!
#1609112

$1349

THE NEW 24-PIN WONDERS

PPS II 2390 PAPER + PRINTER — 80 COLUMN

Choose from Push, Pull, Front, Rear Cut-Sheet Paper Feeding!
65 CPS Near Letter Quality • 278 CPS Draft
320 CPS Super Draft • 4 Resident Fonts Parallel Interface
Opt. Serial 11K Buffer • 2-Year Warranty
Epson ProPrinter Compatible

$329
#1620717

ARE THERE MORE RELIABLE LETTER QUALITY DOT MATRIX PRINTERS ON THE MARKET? ABSOLUTELY NOT!

PPS II 2391 PAPER + PRINTER — 132 COLUMN

Choose from Push, Pull, Front, Rear, Cut-Sheet Paper Feeding • 132-Column • 65 CPS NLQ
278 CPS Draft • 320 CPS Super Draft
4 Resident Fonts • Parallel Interface
Optional Serial 11K Buffer • 2-Year Warranty
Epson ProPrinter Compatible

$469
#1620728

HIGH YIELD PLUS PRINT CARTRIDGE FOR LASER PRINTERS

Up to 15,000 Pages of Print With 2.8% Average Coverage

$199
#1609189

THE NEW 9-PIN WONDERS

PPS II 2380 PAPER + PRINTER

THEY ACCEPT 6-PART FORMS!

Choose from Push, Pull, Front, Rear Cut-Zheet Paper Feeding! 80-Column
65 CPS Near Letter Quality • 278 CPS Draft • 320 CPS Super Draft • 4 Resident Fonts
Parallel Interface
Opt. Serial 11K Buffer
2-Year Warranty • Epson & ProPrinter Compatible
#1611416

$319

PPS II 2381 PAPER + PRINTER

Choose from Push, Pull, Front, Rear, Cut Sheet Paper Feeding • 132-Column
65 CPS NLQ • 278 CPS Draft • 320 CPS Super Draft
4 Resident Fonts Parallel Interface • Optional Serial 11K Buffer • 2-Year Warranty
Epson ProPrinter Compatible

5 STRAIGHT PAPER PATHS- NO JAMS!

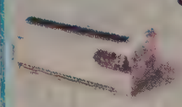
$499
#1611427

2MB MEMORY CARD

Option for 4029 Series Laser Printers

$339
#1629107

HIGH SPEED UNATTENDED TRACTOR FEED PRINTER



MODEL 4226

9-Pin Dot Matrix • 400 CPS Draft
100 Near Letter Quality • 22K Buffer
Parallel & Serial Interfaces • 6-Part Forms
Auto Load, Straight Paper Path, Document on Demand.
#1611438

533 Blazing Characters Per Second In Fast Draft Mode!

$1499

Home of Fast, Friendly, Courteous Service

ELECTRONICS Fry's

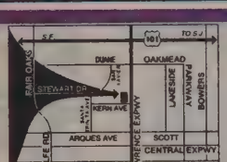
Prices good through May 5, 1992

Limit Rights Reserved Not Responsible For Typographical Errors

HOURS
MON-FRI 8AM-9PM
SATURDAY 9AM-8PM
SUNDAY 9AM-7PM

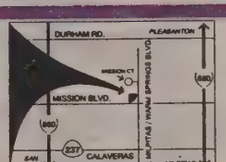
VISA AND MASTERCARD

CORPORATE P.O. FAX # (408)735-6800



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

E.S.P.

EXTENDED SERVICE PLAN

Extend the Manufacturer's Warranty Through Fry's!

ON-SITE!*

Fry's now offers ON-SITE extended service plans to support the extended range of computing environments in today's workplace. Give our "Fry's on Wheels" support team the opportunity to solve your hardware problems. A $999 system configuration would cost only $225/year on a 2 year On-Site w/ Loaner Full-Service Plan.

A LOANER FOR THE OWNER!

Fry's understands the inconvenience of downtime due to manufacturer repair delays. In keeping with our total commitment to service and customer satisfaction we offer our ESP customers loaner equipment for any repairs which exceed a 24 hour turn around and are covered under Fry's Depot or On-Site Service Plan.

ALL AT NO EXTRA CHARGE!

Computers never sleep and neither do our service departments.

7 DAYS A WEEK!

Fry's Service departments are open weekdays and weekends during regular store hours to provide you with complete Depot, On-Site and telephone technical support.

DEPOT:

AT ANY OF FRY'S 3 SUPERSTORES

A) No deductible or hidden charges.
B) Renewable for the life of the product.
C) No limit to the number of repairs
D) Equipment repaired within 24 hours or loaner equipment will be provided.

Only $75/year on a 2 year Loaner Plan for a system costing $999

FACTORY CERTIFIED SERVICE TECHNICIANS

HEWLETT PACKARD
Authorized Dealer
A 50 YEAR TRADITION OF QUALITY.
HP DELIVERS PC PRODUCTS YOU CAN DEPEND ON.

Panasonic Office Automation OA

24 HOUR *QUICK* RESPONSE TIME!

NOVELL NETWARE NETWORK INSTALLATION & SERVICE

MOST PRINTERS AND MOST CLONE COMPUTERS

IBM Business Partner
Authorized Personal Computer Dealer

LEXMARK
Authorized Dealer

EPSON
CITIZEN

IF YOU DIDN'T BUY IT FROM FRY'S...

See us anyway!

We offer extended service protection on systems and printers purchased elsewhere. Bring your equipment into one of our three service departments and let Fry's courteous service technicians assist you in determining your computer service needs.*

* Subject to minimal evaluation & diagnostics fee to determine qualification for coverage.

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Limit Rights Reserved
Not Responsible For Typographical Errors

HOLIDAY HOURS:
MON-FRI
8AM-10PM
SATURDAY
9AM-9PM
SUNDAY
9AM-8PM

VISA AND MASTERCARD

CORPORATE P.O. FAX # (408)735-6800

SUNNYVALE
1177 Kern Ave.
(408) 733-1770

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

WE TACKLE HIGH PRICES!

SUMMIT
MEMORY SYSTEMS INC

120MB TAPE BACK-UP

Now you can safeguard your data and end the drudgery of floppy disk backup. Check out this value! • A field-proven high quality tape drive • Dual-media Central Point Backup software for DOS and Windows, plus virus detection 2 year warranty • 60 day satisfaction-or-money-back guarantee. All for the incredible low price of ... **$229.95**

Model SE120
#1635575

SUMMIT
MEMORY SYSTEMS INC

305MB TAPE BACK-UP INTERNAL IDE

Now you can safeguard your data and end the drudgery of floppy disk backup. Check out this value! A field-proven high quality tape drive High-Speed Backup upto 12MB per minute runs off IDE Hard Drive Controller • 2 year warranty • 60 day satisfaction-or-money-back guarantee All for the incredible low price of ...

$549.95

Model
SE305
#1659405

SUMMIT
MEMORY SYSTEMS INC.

ACCELERATOR BOARD

For SE120 & SE250
Speeds Up Bachup Thru-Put
To 7MB/Minute
#1651186

$169.95

SUMMIT
MEMORY SYSTEMS INC.

SUMMIT EXPRESS 250MB TAPE BACK-UP

Now you can safeguard your data and end the drudgery of floppy disk backup. Check out this value!
A field-proven high quality tape drive
Dual-media Central Point Backup software for DOS and Windows, plus virus detection
2 year warranty 60 day satisfaction-or-money-back guarantee
All for the incredible low price of ...

NOW WITH WINDOWS DRIVER SOFTWARE

$299.95

Model SE250
#1635586

T338 MINI SCSI

POCKET SIZED • PARALLEL TO SCSI HOST ADAPTER • WITH DRIVERS, CD ROM, AND HARD DRIVE.

$159.95

#1641482

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

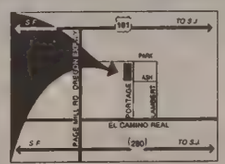
Prices good through May 5, 1992

Limit Rights Reserved
Not Responsible For
Typographical Errors

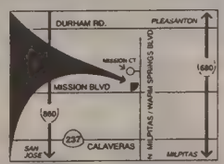
HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA MasterCard
VISA AND MASTERCARD
CORPORATE P.O. FAX # (408)735-6800

SUNNYVALE
1177 Kern Ave.
(408) 733-1770



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

EPSON®

WHEN YOU'VE GOT AN EPSON
YOU'VE GOT A LOT OF COMPANY

EPSON'S NEW SCALABLE FONT DOT MATRIX PRINTERS HAVE BEEN WILDLY SUCCESSFUL - AND FRY'S™ HAS THEM!

ESC/P 2™ EPSON

EPSON Roman And San Serif- SCALABLE From 8 To 32 Points
9 Resident Bit-Mapped Fonts As Well As Top, Rear, Bottom and Front Paper Feed Paths • Automatic Single Sheet And Continuous Form Convertible Push/Pull Tractor • True 360 X 360 DPI Resolution for Professional Quality Graphics • 2 Year Warranty

NB-SL 20MHz 386SL 40MB NOTEBOOK

20MHz 80386SL CPU • 40MB Upgradeable Hard Drive3.5" 1.44MB Floppy Disk Drive • 1MB RAM VGA Output • Serial/ Parallel Ports Low power consumption "SL" chip up to 6 hrs. use.Epson On Road 24hr Response Service

NEW "SL" CHIP W/LOW POWER CONSUMPTION CAPABILITY

$2799

#1674691

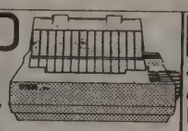
NB-SL 386SL 20MHz 60MB NOTEBOOK COMPUTER

20MHz 80386SL CPU
3.5" 1.44MB Floppy Disk Drive • 1MB RAM
VGA Output • Serial/Parallel Ports
Low Power Consumption "SL" chip
Up to Six Hours Use • 60 MB Hard Drive

$2995

#1661123

FX-850 80 COLUMN DOT MATRIX

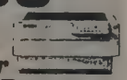


80 Column • 264 CPS Draft 54 CPS NLQ • SelecType Front Control SmartPark Feature • Tractor Feed Two Year Warranty

$319

#1292515

DFX-8000



Switch Between 80 Column & Wide Carriage Paper with the Touch of a Button!

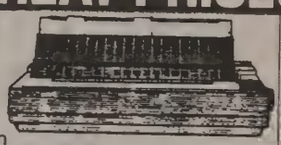
High Speed 9 Pin Printer • 132 Column
533 CPS Super Draft • 480 CPS Draft
80 CPS Near Letter Quality • Dual Push Tractor Feeds • Handles 6 Part Carbonless Forms • Micro Adjust TOF Line Feed

$2699

#1514739

PLUS... GREAT PRICES ON EPSON'S STANDARD FONT CLASSICS!

FX-1050 9-PIN PRINTER



THE WORKHORSE!

9-Pin Printer • 132 Column
264 Characters Per Second Draft
54 CPS Near Letter Quality • SelecType
SmartPark Features • Push Feed Tractor
Optional Cut Sheet Feeder • TWO YEAR WARRANTY

$439

#1292612

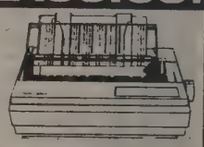
LQ1170 24 PIN PRINTER

136 Column•275 CPS Draft Mode
92 Letter Quality Mode

$629

#1612026

LQ-870 24 PIN PRINTER



80 Column • 275 CPS
Draft Mode • 92 Letter Quality Mode

$469

#1612015

LQ-860 COLOR PRINTER

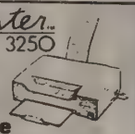
Four Color Ribbon combines to Create 7 Different Colors
Up to 360 X 360 Bit Image Graphics • 300 CPS Draft 90 CPS NLQ • SelecType Front Control Panel • SmartPark Paper Handling
Bi-Directional Printing

$599

#1514728

24 PIN PRINTER

ActionPrinter 3250

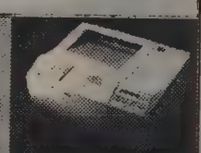


50 Sheet Paper Cassette Tray
Quiet • ESC/P2 Control Language
Simple Control Panel • Two Year Warranty

$239

Model AP-3250
#1667299

EPL-8000 LASER PRINTER



10 Pages Per Minute • 300 DPI
1MB RAM Expandable to 7.5MB
250 Sheet Paper Tray • Resident Fonts
Scalable Fonts • Serial/ Parallel Interfaces
HP LaserJet III Emulation • 2 Year Warranty

$1459.95

#1667283

Service EPSON® Extra Care Certificate

for 1 year extended warranty service

9-Pin Printer $39.95 24-Pin Printer $59.95

EPSON EXTRAS!

EPL 7000/7500 TONER #1558414	$119	**7753 RIBBON** Fits LQ Series (Except LQ-1500), L-1000, L-4000, L-4500 #1418994	$5.95
TONER CARTRIDGE Fits EPL 7000/7500/8000; LONG LIFE IMAGING CARTRIDGE #1667314	$175.95	**7754 RIBBON** For LQ-1000/1010/1050, L-750, AP-4500 #1419009	$9.95
MEMORY BOARD/MB For Action Laser II & EPL 8000 Printer #1658507	$59.00	**8766 RIBBON** Fits DFX-5000/8000. BLACK RIBBON. #1424867	$24.95
S050002 TONER For Actionlaser II Printer #1658518	$96.95	**7762 RIBBON** For LQ-2500/2550/860. BLACK RIBBON. #1419021	$9.95
C823051 SERIAL I/F For Action Laser II Printers #1658552	$69.95	**8750 RIBBON** Fits FX80/86E/850, LX800/810, APEX80, T-1000.#1418972	$5.95

Home of Fast, Friendly, Courteous Service

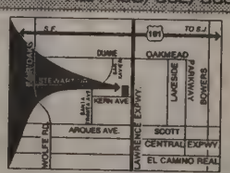
Fry's ELECTRONICS

Prices good thru May 5, 1992

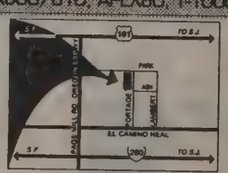
Limit Rights Reserved
Not responsible for typographical errors.

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND MASTERCARD ACCEPTED
CORPORATE P.O. FAX #



SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

Panasonic PRINTER SALE!

An Authorized PANASONIC Reseller & Service Center

C1381i 14" ANALOG SVGA COLOR MONITOR

.28mm Dot Pitch • SVGA/VGA/MCGA • IBM 8514A Compatible • MAC II Compatible * (*requires optional adapter cable)1024 X 768 Interlaced • 800 X 600 Non-Interlaced • Non-Glare Screen • Tilt 'n' Swivel Stand

$348.95

Model C1381
#1544129

PanaSync 1024 X 768 NON-INTERLACED MONITOR

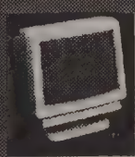
C1395

PANASONIC C-1395
1024 X 768
Non-Interlaced
.28 Dot Pitch
VGA Display

$459.95

#1607947

C-1991 1280 X 1024 20" NON-INTERLACED SUPER VGA MONITOR



1280 X 1024 • Non-Interlaced
.31 Dot Pitch VGA Display
#1653546

$1799

GREAT PRINTER VALUE! KX-P1180i 9 PIN PRINTER

240 CPS Draft • 48 CPS NLQ
240 x 216 DPI Resolution
80 Column • 4 Built-in Fonts
Cut Sheet & Tractor Feed

PC MAGAZINE EDITORS' CHOICE

$169

#1653649

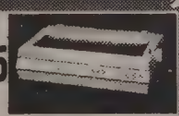
QUIET PRINTER TECHNOLOGY KX-P2180

9 Pin • 80 Columns
192 CPS - 38 CPS NLQ
6 Built In NLQ Fonts
240x 216 DPI Resolution
Push - Pull Tractor

$199

#1658714

KX-P1695 9 PIN PRINTER



EZ Set control panel • 330 cps draft • 66 cps NLQ • 8 resident fonts •16.5" wide carriage
Rear, bottom and front paper feed

$379

KX-P1695
#1542884

KX-P2123 24-PIN NARROW CARRIAGE PRINTER

6 LQ, 1 SLQ and 3 Draft Fonts
Top, Bottom, Rear Paper Feed
240 CPS • 360 DPI Emulations:
Epson LQ-860, IBM Proprinter X24E

$269

#1668153

KX-P1123 24 PIN PRINTER

80 Columns • 192 CPS Draft • 63 CPS LQ • 4 Built-in LQ Fonts • 2 Year Limited Warranty Built-in Tractor Feed

$224

KX-P1123
#1568576

KX-P2624

The Quiet 24-Pin Wide carriage Printer is Here!

Super Letter Quality Mode • 11 Resident Fonts
63 CPS in Near Letter Quality mode • 132 Column
240 CPS in Draft Mode • Rear, Bottom, Front & Top Feed
Programmable EZ Set Operator Panel
Parallel Interface, Optional Serial
#1607936

DRAMATICALLY REDUCED NOISE LEVEL

$399

KX-P4410 LASER PRINTER

5PPM 300 DPI
512K RAM Expandable to 4.5MB
Bitmap Fonts • 200 Sheet Paper
Multi-purpose Cassette

$649

#1659047

Panasonic Office Automation OA KX-P115 RIBBON

BLACK RIBBON FOR 1180,1191 AND 1695 PANASONIC PRINTERS

$7.95

#1467976

Panasonic Office Automation OA KX-P155 RIBBON

BLACK RIBBON FOR 1624 AND 1654 PANASONIC PRINTERS

$9.95

#1543210

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Limit Rights Reserved
Not Responsible For
Typographical Errors

Prices good thru May 5, 1992

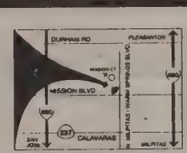
VISA AND MasterCard ACCEPTED

VISA MasterCard

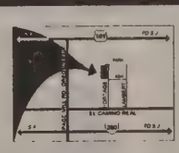
HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

CORPORATE P.O. FAX # (408)735-6800

SUNNYVALE
1177 Kern Ave.
(408) 733-1770



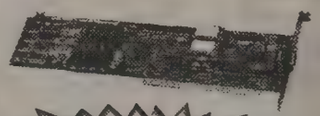
FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

ORCHID ORCHID ORCHID

FAHRENHEIT 1280° WITH 1MB VRAM



UP TO 32,000 COLORS AT 800 X 600 WINDOWS ACCELERATOR!

1280 X 1024, 16 Colors
1024 X 768, 256 Colors
640 X 480 up to 32,000 Colors
72hz Non-Interlaced
132 Column Text Mode
Windows Accelerator
12 times faster than standard VGA!
#1627275

$298.95

PRODESIGNER II 16-BIT VGA GRAPHICS ADAPTER

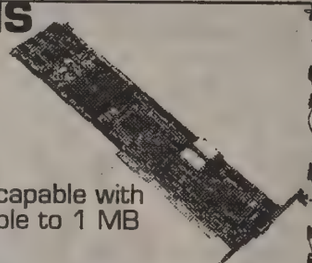
ORCHID

256K Colors at 1024 x 768 capable with upgrade 512K RAM expandable to 1 MB

$129.95

#1433836

PRODESIGNER IIS 16-BIT VGA GRAPHICS ADAPTER

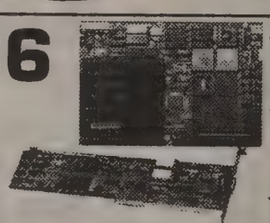


256K Colors at 1024 x 768 capable with upgrade•512K RAM expandable to 1 MB

ORCHID **$169.95**

#1512623

33MHz 486 MOTHERBOARD 1280 X 768 FAHRENHEIT VGA COMBO

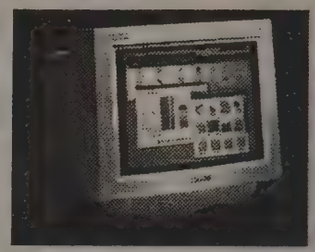


WITH SPECIAL 32-BIT INTERFACE THAT GIVES YOU VIDEO AT TWICE THE SPEED OF 16-BIT BUS

ORCHID **$1295**

#1657481

SONY Sony 1304 1024 X 768 NON-INTERLACED SUPER VGA MONITOR



1024 X 768
.25 Super Fine Dot Pitch

#1460164 **$578.95**

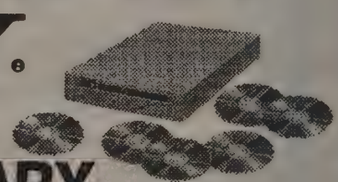
SONY 1604S 17" MONITOR

1024 X 768 SUPER FINE PITCH .
0.25MM DOT PITCH
NOB-INTERLACED; WITH CABLE

$1099

#1643266

LASER LIBRARY SONY CD-ROM LASER LIBRARY



External CD-ROM, Software, Interface, and Cable. Comes with six CD-ROM titles including an encyclopedia, a world atlas, a translation program, an interactive game for children, an encyclopedia of mammals, a package of reference programs and Sony headphones.

$549.95

#1613496

HOME OF FAST, FRIENDLY, COURTEOUS SERVICE

FRY'S ELECTRONICS

Limit Rights Reserved
Not Responsible For Typographical Errors

Prices good thru May 5, 1992

STORE HOURS
MON - FRI
8AM - 9PM
SATURDAY
9AM - 8PM
SUNDAY
9AM - 7PM

SUNNYVALE 1177 Kern Ave. (408) 733-1770
CORPORATE P.O. FAX # (408)735-6800

PALO ALTO 340 Portage Ave. (415) 496-6000
CORPORATE P.O. FAX # (415) 496-6060

FREMONT 440 Mission Ct. (510) 770-FRYS(3797)
CORPORATE P.O. FAX # (510) 770-3700

VISA MasterCard VISA and MasterCard Accepted

SPRING SOFTWARE DEALS AT FRY'S!

DR DOS 6.0

The Most advanced, fully DOS-Compatible operating system available today. It's everything you need to run your DOS, Windows, and networking applications faster. It has Memory-Max and Task-Max features.

NOVELL

IBM $59.95
#1625000

STACKER

DOUBLES HARD DISK CAPACITY

Stacker is a software that can increase the size of your Hard Disk up to double it's capacity. The actual ratio of data compression that occurs depends on the types of files you have on your computer. It compresses data as it enters and decompresses data as it is read.

IBM $84.95
#1571402

ARTS & LETTERS. APPRENTICE

If you want to make creative, professional quality graphics for Home and Business, Apprentice is the software program for you! With over 3,000 award winning clip art images and 25 typefaces, Apprentice is the perfect solution for creating signs, flyers, maps, calendars, invitations, stationery and other graphic compositions.

COMPUTER SUPPORT

IBM $99.95
#1653476

FAXGrabber

THE FIRST FAX CONVERSION UTILITY FOR WINDOWS!

Take faxes from your PC fax board and insert them into virtually any application for editing. FAXGRabber™, the only Windows fax utility, converts faxes to text.

CALERA

IBM $109.99
#1660339

MICROGRAFX WINDOWS DRAW

Micrografx Windows Draw is a simple, easy-to-use drawing program designed to let you create documents and drawings effortlessly. It provides powerful graphic capabilities and extensive Clip Art catalog. You don't have to be an artist to learn how to use this program.

IBM $99.95
#1641172

STAR TREK 25TH ANNIVERSARY

Combines a realistic 3-D space flight simulator with a wide variety of role-playing adventures to create a gripping game of galactic exploration. You'll Play James T. Kirk and experience the thrill of the U.S.S. Enterprise.

IBM $39.95
#1658703

BODYWORKS

It's an adventure in anatomy! Colorful, comprehensive computer graphics guide you on a journey through the body. With its vast database, BODYWORKS lets you study specific areas from head to toe.

$44.99 IBM
#1641323

BORLAND TURBO C++ 3.0

Turbo C++ makes learning using C and C++ easy. Full tutorial, context-sensitive help, and color syntax highlighting help you learn C or object-oriented C++. Pre-compiled headers, VROOMM, built-in assembler,collection classes, and the Programmer's Platform give you true programming power. There's no better value.

IBM $69.95
#1671953

ICON DO IT

ICON DO IT quickly customizes your Windows desktop look and feel. Choose from the 200 designer icons,15 animated icons, 50 custom cursors and five animated cursors included in ICON DO IT. You can also use your own icons. Four spectacular screen savers will dazzle you and protect your monitor.

Mouse Valley Software

IBM $24.95
#1652316

LAPLINK PRO

LapLink Pro is the ultimate laptop file transfer tool in the office and around the world. It includes easy to use pull-down menus, file transfer capabilities over a modem or a cable. It has the fastest transfer speeds in the industry. Now you can transfer files to a PC that doesn't have LapLink Pro installed. It comes with both serial and parallel cables.

Traveling Software

$119.99 IBM
#1637119

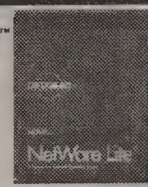
The New Print Shop

Print Shop designs and prints cards, stationery, flyers, calendars and banners.

Broderbund

IBM $35.95
#28325

NetWare Lite™



It is a simple inexpensive peer-to-peer network operating system for 2 to 25 users who require basic network features & functions. This DOS based, "plug-and-play" program allows you to set up a network and begin sharing PC resources such as applications. files and printers in minutes.

NOVELL

IBM $79.99
#1638442

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

HOURS:
MON-FRI 8AM-9PM
SATURDAY 9AM-8PM
SUNDAY 9AM-7PM

MasterCard VISA
VISA AND MASTERCARD ACCEPTED

CORPORATE P.O. FAX #

SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

Prices good through May 5, 1992

Limit Rights Reserved
Not Responsible For Typographical Errors

Windowful World of Microsoft!

Microsoft Windows 3.1

NEW VERSION of Windows makes your PC easier to use. Some of the hottest features:

- Improved set-up automatically loads windows onto your system and maintains your current configuration.
- Faster printing and better output with True Type Font Technology.
- Better support for MS DOS-based applications.
- Improved file manager with Enhanced Drag and Drop capabilities and a lot more!

$89.95

IBM #1672541

Buy Quicken Windows For Only $19.95 With Purchase Of MS Windows 3.1 Or MS Windows 3.1 Upgrade!

Microsoft Windows 3.1 Upgrade

NEW!

All Windows 3.0 users can upgrade to Windows 3.1 in our stores by just showing proof of ownership.

$48.95

IBM #1672563

Microsoft MS DOS 5 Upgrade

Any PC Should Have It!

MS DOS 5 Upgrade frees memory for applications, New features include: Provides more available conventional memory under 640K. Gives DOS applications more memory to use under the MS Windows graphical environment.• Undeletes files and unformats disks.Runs programs simultaneously, quickly swapping tasks without the load-quit-load-quit routine. Manages files ands Directories Using a mouse support shell.

IBM #1601561 **$47.95**

Microsoft Publisher

This program gives you easy to use page layout, text and graphics tools to create first-class publications fast! Produce professional looking newsletters, business forms, fliers, and more in the time it typically takes to write a letter. It comes with:Built-in Word Processor Page Wizard, Word Art, and Toolbar.

IBM #1624940 **$134.99**

Microsoft Word for Windows 2.0

Makes everyday tasks easy! New MS Word 2.0 makes it easier than ever to do everyday tasks such as creating tables, bullets, charts, columns, and drawings. They are all just a click away with the toolbar. You can create envelopes or check your spelling with a click.

IBM #1639580 **$319**

Microsoft Visual Basic

Microsoft Visual Basic Programming system for Windows allows you to create rich graphical applications. The seamless integration of the powerful programming language with visual design tools provides the easiest, most economical route to creating true Windows applications.

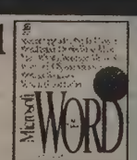
IBM #1606625 **$129.99**

Microsoft Works For Windows

Combines the most important business tools in one remarkably easy -to-use program: Word Processing spreadsheet analysis, database management, charting, and drawing. Add the common sense ease of windows computing and you've got the ideal business partner.

IBM #1624928 **$139.99**

Microsoft Word For Windows Upgrade



Great news for Wordperfect, Wordstar and other Wordprocessor users, there's never been a better time than now to upgrade to MS Windows applications.

IBM #1620555 **$119.95**

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Prices good through May 5, 1992

Limit Rights Reserved Not Responsible For Typographical Errors

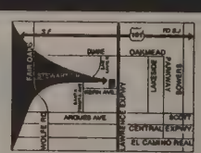
STORE HOURS:
MON-FRI 8AM-9PM
SATURDAY 9AM-8PM
SUNDAY 9AM-7PM

VISA

VISA AND MASTERCARD ACCEPTED

MasterCard

CORPORATE P.O. FAX # (408)735-6800



SUNNYVALE
1177 Kern Ave.
(408) 733-1770

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

BusinessVision II®

The Accounting System for Small Business.™

Whether you distribute a product, sell a service, run a retail store or operate a home business, easy to use BusinessVision II includes all the features you need.

- ▲ All-in-one/On-Line/Real-Time Accounting
- ▲ Accounts Receivable
- ▲ Accounts Payable
- ▲ General Ledger
- ▲ Inventory Control
- ▲ Order Entry & Billing
- ▲ Point-of-Sale Billing
- ▲ Cash Drawer Control
- ▲ Sales Analysis
- ▲ Payroll
- ▲ Export
- ▲ Bank Reconciliation
- ▲ Automatic Posting
- ▲ Financial Reporting
- ▲ Mailing Lists/Labels

And BusinessVision II also works at Point-of-Sale...reads bar codes, controls the cash drawer, prints 40 column receipts, displays cash/credit card payments on screen and analyzes and tracks sales.

And when you buy BusinessVision II between March 30 and May 15, 1992, you'll also get a FREE bonus...Bar Code Software (From the Publisher) to help improve productivity. Don't hesitate. Get yours today.

#1636118 **$129.95**

National Semiconductor

COMPUTER ENHANCEMENT GROUP

Twisted Pair and Coaxial Ethernet Adapters for PC's and Macintosh

EtherNODE 16 SE for MAC SE

IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Coaxial

#1584198 **$189**

EtherNODE 16 SE-T for MAC SE

IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Twisted Pair

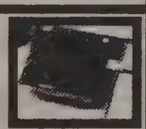
#1602850 **$189**

EtherNODE TPA

Converts Existing Coax Ethernet to Twisted Pair Ethernet
Simple Plug & Play
10 Base T Compatibility

#1584187 **$99**

EtherNODE 8 PC for PC



IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Coaxial

#1584143 **$139**

EtherNODE 32 SE/30 for MAC SE/30

IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Coaxial

#1584213 **$189**

EtherNODE 32 SE/30TP for MAC SE/30

IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Twisted Pair

#1609798 **$189**

EtherNODE 16 AT-T for PC, XT, AT & Compatibles

IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Coaxial

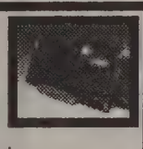
#1584154 **$159**

EtherNODE 16 ATX for PC, XT, AT & Compatibles

IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Twisted Pair

#1584176 **$169**

EtherNODE 16NB for MAC II



IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Coaxial

#1584202 **$189**

EtherNODE 16MAC TP for MAC II

IEEE 8023 Ethernet
Simple Installation
User Diagnostics Included
Supports Popular Network software
Twisted Pair

#1602849 **$189**

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Prices good through May 5th, 1992

Limit Rights Reserved

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

MasterCard VISA

VISA AND MASTERCARD ACCEPTED

CORPORATE P.O. FAX # (408)735-6800

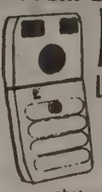
SUNNYVALE
1177 Kern Ave.
(408) 733-1770

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

LOGITECH PRECISION PERFORMANCE PERIPHERALS!

From Camera To Computer Instantly!



FOTOMAN™ DIGITIAL CAMERA FOR COMPUTERS

For IBM PC/AT, PS/2 and Compatible Systems FotoMan™ lets you add full 256 grey scale images to your documents with just the press of a button. There's no film, no developing and no waiting!Small and lightweight. Takes up to 32 pictures at a time. Preview, select and then edit your photos. Enhance photos with FotoTouch™ Image Editing Software for Windows™.

$595.95

#1658655

TEXTUAL TRANSFERENCE TECHNOLOGY!

HAND SCANNER SCANMAN 32

GREYSCALE WITH OCR SOFTWARE ENHANCE TO 256

100-400 DPI
32 Shades of Grey
(256 With Software Enhancement)
Powerful Image Editing
Catchword Software Included
#1594892

$159.95* *After Manufacturer's Rebate. In-Store Price $184.95.

SCANMAN 256 WITH OCR

400 DPI Resolution
Scans in 256 True Shades of Grey • Image Merging
Windows 3.0 Application
#1658633

$299.95* *After Manufacturer's Rebate. In-Store Price $324.95.

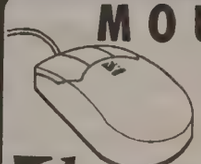
SCANMAN 32 WITH OCR SOFTWARE

100-400 DPI resolution
32 Shades of Grey
Includes Catchword Pro Logitech's Intelligent Character Recognition Software and OCR Software. Accurate and Easy to Use.

MODEL 32 MAC

$369.95 MAC #1661248

MOUSEMAN COMBO



Ergonomic Design • 400 DPI
Fully Programmable
Serial and PS/2 Connectors
Total Microsoft Compatibility
#1559529

MOUSEMAN MAC $65.95* #1605451 *After Manufacturer's Rebate. In-Store Price $75.95.

$57.95* *After Manufacturer's Rebate. In-Store Price $67.95.

BEAM IN CURSOR CONTROL!

MOUSEMAN CORDLESS

3 Button Mouse Operates On Radio Waves
9 To 25 Pin Adapter For Serial Receiver
400 DPI #1566194

$69.95* *After Manufacturer's Rebate. In-Store Price $78.95.

LOST FOR SPACE?

TrackMan Portable

Turns Any Space Into Workspace
Small, lightweight, ergonomic.
For right- or left- handed use.
100% Microsoft™ compatible.

$79.95* *After Manufacturer's Rebate. In-Store Price $94.95.

#1620256

TRACKMAN SERIAL

50-15,000 CPI resolution
Thumb-size trackball
Three button operation
#1491717

$69.99

TrackMan Mac $79.95* #1605462
*After Manufacturer's Rebate. In-Store Price $89.95.

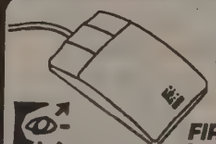
KIDZ MOUSE

FOR IBM AND IBM COMPATIBLES
Kidz Mouse Makes Learning With Computers Easy And Fun!
It includes both The Dinosaur Discovery Kit™ software from First Byte™ and MouseWare™ for Kidz.
•Designed to perfectly fit a child's hand
•Built to last; comes with a lifetime warranty
•Helps children master educational software, do homework or play games
•Fully Microsoft compatible, works with all your software
•Serial Connector Included

$49.95

#1645305

firstMOUSE



FIRST IN CONVENIENCE, FIRST IN QUALITY AND FIRST IN ECONOMY

Three programmable buttons offer you maximum flexibility
Includes Mouse Software for extra convenience
Guaranteed to work with all your applications
#1504667

$39.95

Home of Fast, Friendly, Courteous Service

FRY'S ELECTRONICS

Prices good thru May 5, 1992

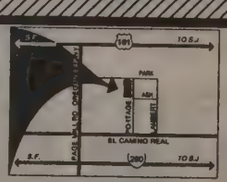
Limit Rights Reserved
Not Responsible For Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND MASTERCARD

CORPORATE P.O. FAX # (408)735-6800

SUNNYVALE
1177 Kern Ave.
(408) 733-1770



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

CREATIVE LABS, INC.

CREATIVE MULTIMEDIA UPGRADE KIT

MPC™ Multimedia PC

100% WINDOWS 3.X COMPATIBLE

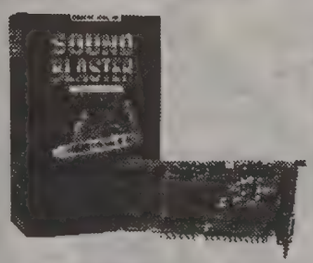
SB SOUND AUDIO BLASTER

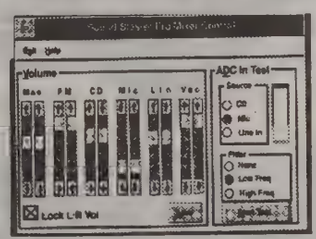
COMPACT disc DIGITAL AUDIO

The All-In-One Multimedia CD-ROM Solution for the PC

SOUNDBLASTER Pro

This package contains the stereo Sound Blaster Pro card and bundled Software such as Voice Editor II, FM Intelligent Organ and others. Sound Blaster is the number one choice in sound cards for the PC and has the largest library of supporting software.





CD-ROM Drive

This high-speed, high-performance CD-ROM drive is available in an internal version. A 540MB data capacity, 64K buffer and 150K byte per second data transfer rate makes this CD-ROM drive a natural for multimedia applications. The easy to install CD-ROM drive includes connecting cables and installation software.

MIDI Kit

The MIDI kit connects your MIDI instruments to the Sound BlasterPro card. The kit also contains Sequencer Plus Pro designed by Voyetra Technologies to harness the power of the Sound Blaster Pro that transforms your PC into a complete MIDI recording studio.

Multimedia Software

The CD-ROM disc contains Microsoft Windows Graphical Environment Version 3.0 with Multimedia Extention 1.0 This full implementation of Microsoft's best-selling Windows 3.0 software contains multimedia applications that set the stage for all your multimedia needs and takes full advantage of the Sound Blaster Pro and CD-ROM drive.
#1632550

INTERACTIVE ADENTURE FROM ICOM SOLUTIONS
SHERLOCK HOLMES
WITH 90 MINUTES OF LIVE ACTION VIDEO

$629.95

CREATIVE CD-ROM KIT

UPGRADE YOUR SOUND BASTER PRO TO BECOME A MULTIMEDIA KIT!
CD-ROM DRIVE • MIDI KIT • MULTIMEDIA SOFTWARE

$379.99 #1651924

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Prices good through May 5th, 1992

Limit Rights Reserved

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

MasterCard VISA

VISA AND MASTERCARD ACCEPTED

CORPORATE P.O. FAX #

SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

HOME OF FAST, FRIENDLY, COURTEOUS SERVICE

Fry's ELECTRONICS

SUNNYVALE
1177 KERN AVE.
(408) 733-1770
Corporate PO Fax # (408) 735-6800

FREMONT
440 MISSION CT.
(510) 770-FRYS (3797)
(510) 770-3700

PALO ALTO
340 PORTAGE AVE. (415) 496-6000
Corporate PO Fax # (415) 496-6060

Prices good through April 7, 1992

Limit Rights Reserved
Not Responsible For Typographical Errors

YOU'RE IN THE CHIPS!

FOR IBM COMPATIBLES
1 MEG 80NS DIPS
$4.39
#1444003

FOR MAC
1 MEG X 8 80NS
$34.88
#1493568

FOR IBM COMPATIBLES
1 MEG X 9 80NS
$37.88
#1436367

FOR IBM COMPATIBLES
256K - 80NS
99¢
#65333

MEMORY MADNESS

FOR MAC
4 MEG X 8 80NS
$129.99
#1523085

FOR IBM COMPATIBLES
4 MEG X 9 80NS
$139.99
#1530292

FOR IBM P/S 2 MODEL 70
2 MEG MEMORY UPGRADE
512K X 36
$99.99
#1472745

FOR MAC FX 64 PIN BOARD
1 MEG X 8 80 SIMM-FX
$44.88
#1515785

FOR IBM COMPATIBLES
256K X 9 80NS
$11.95
#1299920

FOR MAC FX 64 PIN BOARD
4 X 8 80 SIMM-FX
$149.99
#1530616

EPROMS
27C64-150
$2.89
#2448

27C256-150
$3.99
#1503311

EPROMS
27C512-150
$4.99
#71474

27C1MEG-150
$7.99
#166091

IIT INTEGRATED INFORMATION TECHNOLOGY — IIT ADVANCED MATH COPROCESSORS

IIT2C87-8MHz #1504013	$69.95
IIT2C87-10MHz #1504024	$75.95
IIT2C87-12.5MHz #1504035	$82.95
IIT2C87-20MHz #1504046	$89.95
IIT3C87-25MHz #1504080	$154.99
IIT3C87-33MHz #1504138	$159.99
IIT3C87-40MHz #1612060	$214.99
IIT3C87SX-16MHz #1567830	$107.77
IIT3C87SX-20MHz #1567841	$119.99
IIT3C87SX-25MHz #1628346	$139.99

MEMORY UPGRADES — Sun microsystems

NEW! IN STOCK NOW!

MODEL	CAPACITY	PART NUMBER SUN	PART NUMBER FRY'S PART #	PRICE
SUN 3/60	4MB	X104G	#1668452	$159.99
SUN3/80	4MB	X104G	#1668452	$159.99
	16MB	X116H	#1668474	$599.99
SPARC 1(4/60)	4MB	X104H	#1668452	$159.99
	16MB	X116H	#1668474	$599.99
SPARC 1 PLUS (4/65)	4MB	X104H	#1668452	$159.99
	16MB	X116H	#1668474	$599.99
SLC 4/20	4MB	X105Z	#1668485	$149.99
SUN 330	8MB	X108E (X108D REG'D)	#1668452	$319.98
	16MB	X116H	#1668474	$599.99
	32MB	X134A (X133B REQ'D)	#1668474	$1199.98
SUN 4/110 (32-SLOTS)	4MB	X104H	#1668452	$159.99
	16MB	X116H (D)	#1668474	$599.99
SUN IPX	4MB	X104U	#1668485	$149.99
	16MB	X116U (Q)	#1668496	$159.99
SUN ELC	4MB	X104U (Q)	#1668485	$149.88
	16MB	X116U (Q)	#1668496	$599.99
SUN 670 GALAXY	64MB	X168A	#1668474	$2399.95
SPARC IPC (4/40)	4MB	X104Y	#1668452	$159.99
	16MB	X116Y	#1668452	$599.99
SPARC 2 (4/75)	4MB	X104Y	#1668452	$159.99
	16MB	X116Y	#1668474	$599.99

PLEASE CONSULT YOUR REFERENCE MANUAL FOR RAM UPGRADE LIMITATIONS.
MOST SYSTEMS REQUIRE MODULES BE INSTALLED IN INSTALLED IN SETS OF FOUR (4).
X104G, H, Y = 4 X 91000-08M X116H, W,Y = 4 X 94000-08M

FRY'S HAS MEMORY SOLUTIONS FROM Z-RAM FOR IBM, APPLE, TOSHIBA, HP, & COMPAQ WORK STATIONS

COMPATIBLE MEMORY UPGRADES FOR IBM PS/2 SYSTEMS

MODEL	PLU#	Z-RAM PART#	SIZE	PRICE
LAPTOP 40SX	#1668522	505402	2MB	$114.99
	#1668681	505404	4MB	$199.99
	#1668614	505408	8MB	$388.99
55SX, 65SX 70-161/ E61, 121	#1668876	505603	1MB	$59.99
50-021 55SX, 65SX 70-161/ E61,121	#1668957	505604	2MB	$114.99
55SX, 65SX 55LS, 65LS	#1668599	505933	4MB	$199.99

COMPATIBLE MEMORY UPGRADES FOR TOSHIBA SYSTEMS

MODEL	PLU#	Z-RAM PART#	SIZE	PRICE
T5200, T5200C T8500	#1668692	520304	2MB	$119.99
T1200XE	#1668625	520306	2MB	$99.99
T3200SX	#1668865	520307	2MB	$109.99
	#1668924	520309	4MB	$199.99
T3100SX	#1668902	520308	2MB	$99.99
	#1668795	520310	4MB	$179.99
T100)LE, T2000, T2000SX, T2000SXe, T2200SX	#1668832	520314	4MB	$319.99
	#1668588	520315	8MB	$619.99
T2000SX	#1668566	520316	1MB	$139.99
	#1668740	520317	2MB	$179.99

COMPATIBLE MEMORY UPGRADES FOR HP PRINTERS

MODEL	PLU#	Z-RAM PART#	SIZE	PRICE
LASERJET IIP PLUS, III, IID & IIIP	#1670033	525474	1MB	$78.99
	#1670044	525475	2MB	$122.99

COMPATIBLE MEMORY UPGRADES FOR APPLE

MODEL	PLU#	Z-RAM PART#	SIZE	PRICE
POWERBOOK 100, 140 & 170	#1670066	530032	2MB	$299.99
POWERBOOK 140 & 170	#1670136	530433	4MB	$459.99
	#1670147	530434	6MB	$619.99
LASERWRITER II NTX	#1670055	530006	4MB	$189.99

COMPATIBLE MEMORY UPGRADES FOR COMPAQ SYSTEMS

MODEL	PLU#	Z-RAM PART#	SIZE	PRICE
DESKPRO 386/20e & DESKPRO 386/25e	#1668544	510131	1MB	$79.99
(REQUIRES 32-BIT COMPAQ EXPANSION BOARD COMPAQ PART #113644-001 or #113645001)	#1668636	510132	4MB	$219.99
DESKPRO 386/33 & 386/SL (REQUIRES 32-BIT COMPAQ EXPANSION BOARD COMPAQ PART #116569-001)	#1668706	510144	2MB	$129.99

MORE SOLUTIONS AT ALL FRY'S LOCATIONS

Home of Fast, Friendly, Courteous Service

FRY'S ELECTRONICS

Prices good through May 5th, 1992

Limit Rights Reserved Not Responsible For Typographical Errors

HOURS:
MON-FRI 8AM-9PM
SATURDAY 9AM-8PM
SUNDAY 9AM-7PM

CORPORATE P.O. FAX #

MasterCard VISA

VISA AND MASTERCARD ACCEPTED

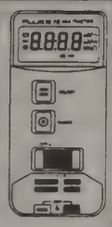
SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

FLUKE DIGITAL MULTIMETERS

FLUKE 10 HANDHELD DIGITAL MULTIMETER

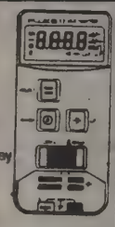


4000 count digital display
1.5% basic dc volts accuracy
2.9% basic ac volts accuracy
1.5% basic ohms accuracy
Fast continuity beeper • Diode Test
Sleep mode • Two year warranty

$69.95

#1636037

FLUKE 11 HANDHELD DIGITAL MULTIMETER

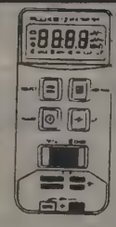


Capacitance: .001 to 9999uF
V Check™ • 4000 count digital display
0.9% basic dc volts accuracy
1.9% basic ac volts accuracy
0.9% basic ohms accuracy
Fast continuity beeper • Diode Test
Sleep mode • Two year warranty

$79.95

#1636048

FLUKE 12 HANDHELD DIGITAL MULTIMETER



Min Max recording with relative time stamp
Capacitance: .001 to 9999uF
V Check™ • Continuity Capture™
4000 count digital display
0.9% basic dc volts accuracy
1.9% basic ac volts accuracy
0.9% basic ohms accuracy
Fast continuity beeper • Diode Test
Sleep mode • Two year warranty

$89.95

#1636059

FLUKE 70 SERIES II DIGITAL MULTIMETER

DC VOLTS - .5 basic DC accuracy
AC VOLTS - .2% accuracy from 45Hz to1KHzOhms • Diode Test
Touch Hold Continuity Beeper • Sleep Mode
Improved TL 75 • Test Leads
200Hr. Battery Life • Three Year Warranty

$68.95

#1567494

FLUKE 73 SERIES II DIGITAL MULTIMETER

3200 COUNT DIGITAL DISPLAY
31 SEGMENT ANALOG BAR GRAPH
0.7% BASIC DC VOLTS ACCURACY
3.0% BASIC AC VOLTS ACCURACY
2.0% BASIC DC VOLTS CURRENT ACCURACY (32mA TO 10A)
1.0% BASIC RESISTANCE ACCURACY • HOLSTER/FLEX-STAND
2000 HOUR BATTERY LIFE (ALKALINE) • DIODE TEST • TL70 TEST LEADS
AUDIBLE CONTINUITY BEEPER • AUTORANGING WITH MANUAL RANGING
SLEEP MODE • 3 YEAR WARRANTY

$98.99

#1567461

FLUKE 75 SERIES II DIGITAL MULTIMETER

3200 COUNT DIGITAL DISPLAY
31 SEGMENT ANALOG BAR GRAPH
0.5% BASIC DC VOLTS ACCURACY
2.0% BASIC AC VOLTS ACCURACY
1.5% BASIC DC VOLTS CURRENT ACCURACY (32mA TO 10A)
0.7% BASIC RESISTANCE ACCURACY • HOLSTER/FLEX-STAND
2000 HOUR BATTERY LIFE (ALKALINE) • DIODE TEST • TL70 TEST LEADS
AUDIBLE CONTINUITY BEEPER • AUTORANGING WITH MANUAL RANGING
SLEEP MODE • 3 YEAR WARRANTY

$138.99

#1567472

FLUKE 77 SERIES II DIGITAL MULTIMETER

3200 COUNT DIGITAL DISPLAY
31 SEGMENT ANALOG BAR GRAPH
0.3% BASIC DC VOLTS ACCURACY
2.0% BASIC AC VOLTS ACCURACY
1.5% BASIC DC VOLTS CURRENT ACCURACY 32mA TO 10A)
0.5% BASIC RESISTANCE ACCURACY • HOLSTER/FLEX-STAND
2000 HOUR BATTERY LIFE (ALKALINE) • AUTOMATIC TOUCH-HOLD • DIODE TEST
AUDIBLE CONTINUITY BEEPER • AUTORANGING WITH MANUAL RANGING
SLEEP MODE WITH HARD POINTS • 3 YEAR WARRANTY

$164.99

#1567483

FLUKE 83 DIGITAL MULTIMETER

0.3% Basic Accuracy
5kHz acV
Analog bar graph and zoom
Three year warranty
VOLTS, OHMS, DIODE TEST, AUDIBLE CONTINUITY, FREQUENCY AND DUTY CYCLE CAPACITANCE, TOUCH HOLD, RELATIVE PROTECTION MODES, HOLSTER WITH FLEX STAND

$214.99

#1440227

FLUKE 85 DIGITAL MULTIMETER

0.1% Basic dc Accuracy
20kHz acV
Analog bar graph and zoom
Three year warranty
VOLTS, OHMS, DIODE TEST, AUDIBLE CONTINUITY, FREQUENCY AND DUTY CYCLE CAPACITANCE, TOUCH HOLD, RELATIVE PROTECTION MODES, HOLSTER WITH FLEX STAND

$254.99

#1440216

FLUKE 87 DIGITAL MULTIMETER

0.1% Basic dc Accuracy • 20kHz acV
High resolution Analog pointer
True RMS ac • 1ms PEAK MIN MAX
4 1/2 digit mode • Back lit display
Three year warranty
VOLTS, OHMS, DIODE TEST, AUDIBLE CONTINUITY, FREQUENCY AND DUTY CYCLE CAPACITANCE, TOUCH HOLD, RELATIVE PROTECTION MODES, HOLSTER WITH FLEX STAND

$298.99

#1440238

FLUKE 97 SCOPEMETER™

Hand-held instrument that teams a 50MHz 25 mega-samples per second, dual channel digital storage oscilloscope with a feature-packed 3000-count digital multimeter. All in a rugged, sealed industrial package with battery operation that you can take anywhere you go.

#1625309

NEW **$1795**

SOLDERING STATION

CONVENIENCE THAT'S REMOTELY CONNECTED

- Compact, Remote Operator Comfort & Convenience
- Self Feeding Water Reservoir
- Exclusive closed loop transformer
- Pencil stand connects to right or left of station

$79.99 Weller

Model WTCPS
#68011

60 DRAWER STORAGE CABINET

AKRO-MILS

See-thru drawers
Stackable frames
Recessed tray top
Pedestal base
Keyhold Hanging slots
Grey pebble grain finish

$11.99

Model 10-460
#1497148

TELEPHONE TALK KIT

Provides capability of building a standard Appletalk network.

$12.99

Model MF-037
#1640218 DIN 8

6 FT IBM PARALLEL PRINTER CABLE

A01-101
#1653100

$1.99

TECH SPRAY

PRECISION DUSTER

Pressurized Dusting Gas.
Cleans delicate components.

$11.99

22 oz.
#1661743

NEW NTE'S RELAY AND ACCESSORIES LINE

COME SEE OUR DISPLAYS

$3.60

R56-1D.5-6
#1667989

DELUXE INDUSTRIAL COAXIAL CRIMPING KIT RG58

SHATTUCK INDUSTRIES

Includes Crimp Tool Frame • RG58 and RG59/62 Die Set, RG8281, RG174, RG8/11 Die Set, Pro-Ax Coax Stripper with Foam Cutout Hard Case RG58 and 59 Plenum Die Set, Amp Thinner RG58 Die Set

$206.95

Model 95-0025
#1672851

KEYED OR NONKEYED MODULAR PLUG TERMINATOR KIT RJ45

$79.95

Model 95-0003
#1524318

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Prices good through May 5th, 1991

Limit Rights Reserved Not Responsible For Typographical Errors

HOURS:
MON-FRI 8AM-9PM
SATURDAY 9AM-8PM
SUNDAY 9AM-7PM

MasterCard VISA

VISA AND MASTERCARD ACCEPTED

CORPORATE P.O. FAX #

SUNNYVALE
1177 Kern Ave.
(408) 733-1770
(408)735-6800

FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060

Fry's ELECTRONICS & RCA present...

Home Theatre

RCA 4-HEAD VHS HIFI VCR WITH VCR PLUS PROGRAMMING

This VCR from RCA has four heads, HiFi stereo, and a cable-ready tuner, but best of all it comes packaged with the VCR Plus+(*) programming system which takes advantage of the code numbers published in the newspaper to make programming your VCR as easy as possible.

VCR+ PROGRAMMING

$448

MODEL VR-680
#1634138
* VCR + is a trademark of GemStar Development

RCA 35" HOME THEATRE COLOR TV WITH PICTURE IN PICTURE

RCA presents a TV that is more than just a TV. With features like picture in picture, universal remote control and 700 lines of resolution its the centerpiece of a home theatre.

$1698

MODEL F-35100 #1658323

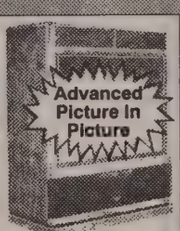
RCA DUAL SIDE LASERDISC COMBI PLAYER

Enjoy movies in your home the way they were meant to be seen and heard. This awesome laserdisc player delivers over 425 lines of crisp video resolution and is compatible with all format of laser media. Other features include dual side play, shuttle search and dual 1 bit d/a converters for the best audio performance.

$548

MODEL LDR-400
#1634172

RCA 46" PROJECTION TV WITH SOUND RETRIEVAL SYSTEM



Don't just watch movies, experience them.RCA brings the theatre into your home with this giant 46" projection television. This dynamic performer boasts such features as Sound Retrieval System (SRS), advanced color picture in picture and a built in VCR storage area.

$2298

MODEL
P-46159
#1633702

RCA HiFi VHS T-120 VIDEO CASSETTE TAPE

$2.49 EACH

#1662087

RCA 31" HOME THEATRE TELEVISION WITH SURROUND SOUND

Now, you can have a home theatre 31" television from the company that invented color television. This outstanding giant tubed TV features surround sound, a comb filter, a universal remote and much more for only...

$998

MODEL F-31223
#1633665

Fry's ELECTRONICS

Home of Fast, Friendly, Courteous Service

Prices good through May 5, 1992

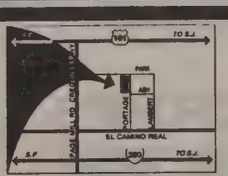
Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

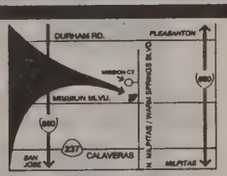
VISA AND MASTERCARD

CORPORATE P.O. FAX # (408)735-6800

SUNNYVALE
1177 Kern Ave.
(408) 733-1770



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

YOU WON'T BE OUT OF TOUCH
WITH A CELLULAR PHONE FROM FRY'S ELECTRONICS

MOTOROLA

CELLULAR TOTE PHONE

This new addition to the Motorola family of cellular phones offers a 30# numeric memory, 3 Full watts of power and much more! An unbelievable value at only...

$249

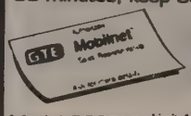
Model S2826
#1666944

Limit 1 per customer
No sales to dealers
or resalers.

MOTOROLA

TRANSPORTABLE HANDHELD CELLULAR TELEPHONE

Motorola's most popular Hand Held Phone has all the right features! This compact unit will allow you to talk for up to 90 minutes, keep 30 numbers in memory, and much more!



$399

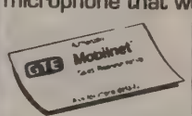
Model 8000HX
#1502549

Limit 1 per customer
No sales to dealers
or resalers.

MITSUBISHI
INTERNATIONAL CORPORATION

TRANSPORTABLE CELLULAR TELEPHONE

If it's features you want, the 1500 has it all! It keeps your most frequently dialed numbers and redials busy numbers automatically. For most phones, hands free requires an external kit with installation required. Not this phone! All you need is a microphone that we have in stock!



$439

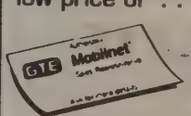
Model 1500TPK
#1591682

Limit 1 per customer
No sales to dealers
or resalers.

MOTOROLA

CELLULAR TELEPHONE

Get Motorola's hottest Cellular Telephone with Alpha-Numeric display, compact ergonomic design and low profile antenna for the amazing low price of . . .



$518

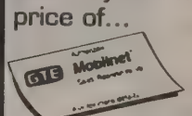
Model 9800HX
#1591660

Limit 1 per customer
No sales to dealers
or resalers.

MITSUBISHI
INTERNATIONAL CORPORATION

HANDHELD CELLULAR TELEPHONE

Get Mitsubish's hottest new handheld phone with alphanumeric display, 100 Number Memory and much more for the hot low price of...



$598

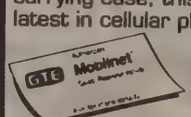
Model
3000SPK
#1541609

Limit 1 per customer
No sales to dealers
or resalers.

MOTOROLA

ALPHA MICRO-TAC CELLULAR PHONE

If it's small and lightweight that your looking for, this is the cellular phone for you! With it's 101 alpha numeric memory, a desktop rapid charger, 20 hour battery in standby, 8 hour battery in standby and carrying case, this cellular phone incorporates the latest in cellular phone technology at only...



$879

Model DPCAC
#1635988

Limit 1 per customer
No sales to dealers
or resalers.

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

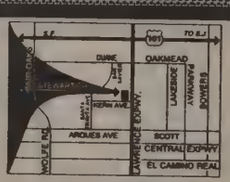
Prices good through May 5th, 1992

Limit Rights Reserved
Not Responsible For
Typographical Errors

HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

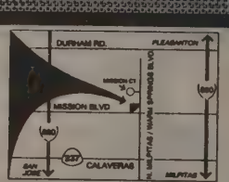
VISA AND MASTERCARD

CORPORATE P.O. FAX # (408)735-6800



SUNNYVALE
1177 Kern Ave.
(408) 733-1770

PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

PowerBook Repair

Tales Of The Bleeding Edge

BY MARY EISENHART

Date: Thu, 27 Feb 92 21:44:03 GMT -0700
To: MicroTimes <microx@well.sf.ca.us>
From: John Perry Barlow <barlow@eff.org>

Oh, one other thing. I have a terrible crisis on my hands which you might be able to assist with.

My PowerBook has burned to the ground!

I'm planning on being on the road for the next month most of the time, and never in one place for more than five days. Upon coming back from Japan, I am coming briefly through Wyoming and then leaving for Spain, France, and Germany. Then I'm going to be all over the East Coast, all the while trying to finish the lyrics book.

So I am desperate beyond description.

What I would like to do is figure out some way to pull an exchange between my machine (which is still under warranty, of course) and a working one when I pass through San Francisco on my way from Tokyo to Kansas City on Tuesday. Don't tell me anything about my Official Apple Dealer. You and I both know how far that will get me. Besides, I bought this through a developer's agreement, so my Apple Dealer is Apple.

Could you or Michael research this and tell me what my options are?

Dear readers, we sincerely hope this never happens to you. We hope the Sad Mac never shows his face on your PowerBook's screen. We hope nothing ever goes wrong with your PowerBook.

The point of the following saga, however, is that if something *does* go wrong, you've got resources.

THE ORTHODOX PATH

Upon receiving this transpacific distress call, my first move was to head over to The WELL's Macintosh conference, which is to the digital world approximately what BMUG is to the analog. I'd been singing the praises of the 170 there for months, and as more people went out and bought the machines the PowerBook topic developed into an essential information resource.

There, I explained the situation and called for help. One user reported that his PowerBook had also died. That a call to a mysterious toll-free hotline had brought an Airborne truck to his door. That Airborne had whisked the deceased PB away, to return it two days later in perfect working order. Free of charge.

Yeah, sure, I thought. Over the years Apple has distinguished itself for many excellent qualities, but remarkable support and efficient repair service have not been among them. The one-year warranty, as longtime Mac users will recall, is a recent innovation, and calling Cupertino with problems simply invoked the call-your-dealer mantra. Which, as Barlow crankily pointed out, would not serve in this situation.

Nonetheless, armed with the PB's serial number, I called the hotline (1-800-767-2775, 6 am–5 pm Pacific time, Monday through Friday)—the number of which is actually included with the PowerBook's documentation if I'd bothered to read it. I was not too optimistic, especially since the only working plan was to Airborne the machine from San Francisco to Apple and back to Wyoming. I expected major bureaucratic hassles at the very least.

I didn't get them. The initial recorded message pointed callers to the numbers they should press for Software Problems, Hardware Problems, etc. I soon reached a support person by the name of Reed. I gave him the serial number. He punched it in. "The machine belongs to John Barlow," he said a few seconds later.

More or less stunned by this efficiency, I explained the whole sorry mess. Reed was unfazed. It was duly arranged that we'd drop the PowerBook off at the Airborne office in San Francisco and that it would be returned to Barlow in Wyoming. The turnaround time was running around four days, Reed said.

And indeed, when Tuesday rolled around, there was a shipping box waiting for the PowerBook at the Airborne office. With properly done paperwork indicating that the machine was going to the repair facility in Texas,

Continued on page 246

Most of us are pretty fond of our desktop Macs anyway, but PowerBook dependency is far more formidable—the relationship is somewhere between right arm and family pet.

PRODUCT SPOTLIGHT

New Products

STORAGE HARDWARE

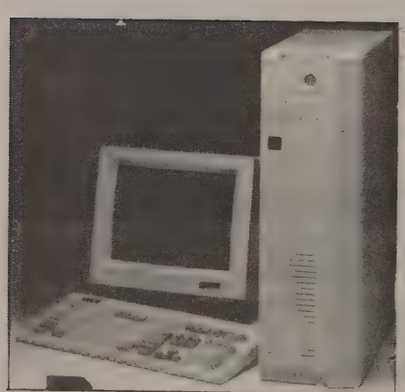
PIC HANDHELD HARD DRIVE

The PIC HandHeld hard drive offers an ideal solution for laptop computers and file transfer, as well as system support. It is compatible with any parallel port on a PC and runs on DOS 3.0 or higher. This unit, weighing only 1.5lbs., measures 1.5" x 5" x 5" and includes a power supply, disk controller, cables, and battery. Using the internal, rechargeable battery, the PIC HandHeld can run for up to 4.5 hours. To transfer multiple, large files, the PIC HandHeld is faster and easier than most commonly used file transfer utilities. In addition, using the PIC HandHeld can also save time and frustration when setting up or repairing a network or other high-end systems that require dozens of floppy disks. (20MB version, $299) Pars International Computer Corp., 22441 Foothill Blvd., Hayward, CA 94541. (510)733-0103.

RELAX REWRITEABLE OPTICAL DRIVE

The Sierra MO is a fast 3.5", 120MB rewriteable optical disk drive offering an ideal primary or backup storage device for IBM PC compatibles, Macintosh, and Sun computers. With an average seek time of 33 milliseconds, this drive is faster than comparable Sony and IBM drives. In addition, the Sierra MA has a sustained data transfer rate of 640K/second. It is SCSI-compatible and supports both ISA and ANSI standards. ($1399, includes media, software, and cables) Relax Technology, Inc., 3101 Whipple Rd., Union City, CA 94587. (510)471-6112.

486 PC HARDWARE



POLY 486/50L

The new Poly 486/50L is based on a 50MHz, 486DX processor. It features a proprietary 32-bit direct video slot providing direct access to the CPU, which results in significant performance improvement. The system includes seven 16-bit ISA slots plus the one 32-bit Local Bus slot for its graphics card. The standard Poly 486/50L comes with 16MB of RAM, a 340MB hard disk drive, IDE control-

Continued

PRODUCT UPDATES

➤**Net Watchman 1.2**, from **The AG Group**, adds several notification and information management enhancements. The AG Group, Inc., 24540 Camino Diablo, Suite 202, Walnut Creek, CA 94596. (510)937-7900.

➤**Artisoft** announced an **offer to convert users of any NetWare 2.2 network** to the latest version of its LANtastic network for only $499. NetWare 2.0 users will save $2000 off the regular price of $2499 for LANtastic/AI unlimited network software that works with third-party adapters and supports up to three hundred users. Artisoft, Inc., 691 E. River Rd., Tucson, AZ 85704. 1-800-TINY-RAM.

➤**Autodesk** announced **3D Studio Release 2**, a major software upgrade providing new visualization tools and productivity enhancements for graphics professionals using 386/486-based PCs. For a limited time current users can upgrade for $395. Autodesk, Inc., 2320 Marinship Way, Sausalito, CA 94965. 1-800-525-2763. CompuServe: GO ASOFT.

➤**Banner Blue** announced the availability of **Org Plus for Windows**. Banner Blue Software, Inc., 39500 Stevenson Place, #204, Fremont, CA 94593. (510)794-6850.

➤**CADMAN** announced **ViewPort+ Release 3.10**. This upgrade allows users to quickly and accurately view drawings created by other CAD systems. CADMAN Corp., 223 E. Thousand Oaks Blvd., Suite 215, Thousand Oaks, CA 91360. (805)371-0424.

➤**Creative Labs** announced immediate availability of its **Sound Blaster Multimedia Upgrade Kit**. This package, which complies with MPC standards, contains the Sound Blaster Pro stereo system, a CD-ROM drive, Windows 3.0 with Multimedia Extensions 1.0, Sound Blaster Pro software, a MIDI kit, and five CD-ROM titles. Creative Labs, Inc., 1901 McCarthy Blvd., Milpitas, CA 95035. (408)428-6600.

➤**Hilgraeve** announced that the antivirus features in its **HyperACCESS/5** and **HyperCopy** software have been updated to automatically detect 315 computer viruses known by 644 names. Registered users of HyperACCESS/5 can download the updated software from the Hilgraeve Customer Service BBS. For a limited time HyperCopy is available free also by calling the Hilgraeve BBS. Hilgraeve, Inc., Genesis Centre, 111 Conant Ave, Suite A, Monore, MI 48161. 1-800-826-2760. BBS: (313)243-0645.

➤**Micro Logic** announced **Info Select v2.0**. The upgrade from the original Info Select is $39.95 and from Tornado is $75. Micro Logic Corp., PO Box 70, Hakensack, NJ 07602-9945.

➤**Variable Symbols** offers an update to its HyperCard-based **Mathematica Help Stack** to cover Mathematica v2.0. Variable Symbols, Inc., 2162 Shattuck Ave., Suite 202, Berkeley, CA 94704-1313. (510)843-8701.

New Location, New Low Prices

Technoland

Serving the Bay Area Since 1986

Limited Time Only: FREE UV Protection Sunglasses with any purchase over $30!

REPAIR SERVICES

Virus Removal

Hard Drive Problems

Monitors Repairs

Our experienced technicians can save you the cost of replacing existing equipment

Upgrade Motherboards

No appointment necessary
Fast turn-around
Courteous service

Upgrade Now and Save BIG!

MOTHERBOARD & CPU

80286-12/16/20MHz	$69/79/89
80386sx-16/20/25MHz	$145/175/185
80386DX-25MHz CPU	$265
80386DX-25/33/40MHz w/ 64K Cache	$295/315/335
80486DX-25/33MHz w/o Cache	$565/585
80486DX-25/33MHz w/ 64K Cache	$595/605
80486DX-25/33/50 w/ 256K Cache	$625/645/945
80486DX-33MHz EISA w/ 64K Cache	$1,225
Memory (each megabyte)	$37
Installation Fee	$38

386sx-25MHz Complete System Special with SuperVGA

FCC Class B Certified

80386sx-25MHz
2MB RAM Installed
IDE Host Adapter
Teac 1.2MB Floppy Drive
80MB Hard Drive
16-bit SuperVGA w/ 512K
14" SVGA (1024x768) Monitor
2 Serial, 1 Parallel, 1 Game Ports
101-key Enhanced Keyboard

$1,048

Complete System with SuperVGA

FCC Class B Certified

Choose between the 80486 or the 80386!

4MB RAM Installed
IDE Host Adapter
Teac 1.2MB Floppy Drive
200MB Hard Drive
16-bit SuperVGA w/ 1MB
14" SVGA (1024x768) Monitor
2 Serial, 1 Parallel, 1 Game Ports
101-key Enhanced Keyboard

OTHER CONFIGURATIONS AVAILABLE

ONE-YEAR ON-SITE SERVICE ALSO AVAILABLE

CALL FOR DETAILS

$1,858 486-33MHz w/ 64K Cache

$1,568 386-33MHz w/ 64K Cache

APRIL SPECIALS

Panasonic Lithium Computer Battery	$5
Surge Protector Strip/Pad	$6/16
101-key Enhanced Click Keyboard	$23
Logitech MouseMan Serial/Bus	$66/71
Sound Blaster/SB Pro	$119/189
Fujitsu DL1100/DL1100 Color	$288/329
Okidata Microline 182/320	$249/345
Cyrix 387-25/33MHz	$159/169
SuperVGA Monitor w/ 512K Card	$305
Fujitsu 778MB SCSI Drive	$1225
Fujitsu 1.2GB SCSI Drive	$1795

CALL FOR THE BEST PRICES!

SEE OUR NEW SHOWROOM!

1 block away from our former location, at the intersection of Kifer and Copper.

Corporate Accounts

Government/Education Purchase Orders

Visa and MC Accepted

3485 Kifer Road
Santa Clara, CA 95051
TEL: (408) 524-9188
FAX: (408) 524-9193

9AM-6PM MON-FRI

10AM-5PM SAT

Price subject to change without notice; not responsible for typos

12 SLOTS! 386-33MHz Basic System

Custom Configuration Available.

Call for Details!

Running out of slots? Or just need a server with room to expand. This is THE perfect one to suit your specific needs!

Intel 80386-33MHz CPU
1MB on board, up to 32MB
IDE Host Adapter
1.2MB Floppy Disk Drive
2 Serial Ports/1 Parallel Port
Watchdog Timer
Six 5.25" Half-Height Bays
Ten 16-bit slots, two 8-bit slots
Socket for Coprocessor
6-layer board
230W P/S

$889

Can't find it?

Give us a call and we'll special order it for you at the lowest price possible in the shortest time possible!

PRODUCT SPOTLIGHT

ler with 1MB cache, dual floppy drives, two serial ports, one parallel port, and a 101-key keyboard. Its full-size tower case includes a 300W power supply with two cooling fans. ($4500) Polywell Computers, Inc., 61 C Airport Blvd., S. San Francisco, CA 94080. (415)583-7222.

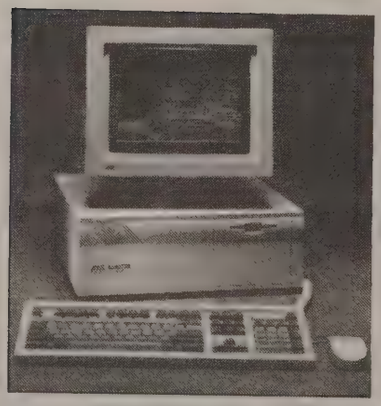
V88 LBV433

The new LBV433, from V88 Systems, is a 33MHz, 486 local bus super VGA system that provides powerful Windows video performance. It comes with 64K external cache (expandable to 265K), 4MB of RAM (expandable to 32MB), tower case, enhanced keyboard, IDE controller, two serial ports, one parallel port, dual floppy drives, and a 120MB hard disk drive. The system also includes a 32-bit 33MHz local bus SVGA card with 1MB video RAM. ($2295 with 1024 x 768 Super VGA color monitor, Logitech mouse, and pre-loaded with Windows 3.1 and MS-DOS 5.0) V88 Systems, Inc., 1638 Centre Points Dr., Milpitas, CA 95035. (408)945-1668.

386 PC HARDWARE

WYSE DECISION 386/40

The Decision 386/40 offers enhanced performance by using AMD's 40MHz Am386DXL processor. Communication with peripheral devices is also improved by the multispeed ISA expansion bus. The user-selectable turbo-charged mode offers speeds of 10MHz and 13.33MHz. The default speed of 8MHz is used for older, timing-sensitive accessories. Six expansion slots accept both 8-bit and 16-bit ISA boards, and a seventh 8-bit slot is provided for older boards. The 200W power supply can power accessories in all of the expansion slots, as well as the four half-height storage bays. Standard features include 4MB of RAM (expandable to 64MB) and MS-DOS 5.0 (MS OS/2 is available as an option). (Prices range from Model 1 with a 1.2MB 5.25" floppy drive for $1999 to Model 200 with a half-height 200MB hard disk drive for $3399) Wyse Technology, Inc., 3471 N. First St., San Jose, CA 95134. (408)473-1200.

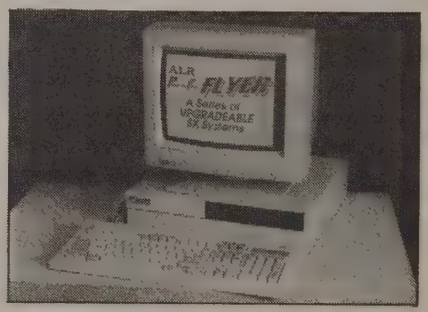


HP VECTRA 386S/20 PC

The HP Vectra 386s/20 PC is designed to provide end-users with expansion capabilities for future computing needs. It integrates video and disk drive controllers to keep available the five 16-bit ISA slots for accessories such as LAN and fax/modem cards. Easy-to-use security features prevent unauthorized access to data, avoid data corruption, and secure network and system environments. Similar to the HP Vector 486s/20 PC, this new PC is designed to function in desktop and deskside orientations. A variable-speed fan, which automatically adjusts in response to room temperature, helps maintain a low-noise environment. The standard configuration includes a 20MHz, 386SX processor, 16K cache, 2MB of RAM (expandable to 16MB), one parallel port, two serial ports, and a 101-key keyboard with adjustable audio feedback and color-coded legends. (Base price with 1.44MB 3.5" floppy drive and no hard disk is $1799) Hewlett-Packard Co., 19310 Pruneridge Ave., Cupertino, CA 95014.

ALR POWERFLEX FLYER 386SX/25

In a move to put quality computers within the financial reach of more users, ALR has introduced the Powerflex Flyer 386SX/25. Using an Intel 25MHz, 386SX processor, this fully upgradable ISA-based PC comes standard with a 60MB hard drive, 1.44MB 3.5" floppy drive, 1MB of RAM (expandable to 16MB), five expansion slots, and three storage bays. ALR has also announced three upgrade options to boost processing performance to 486SX levels in 16, 20, and 25MHz speeds. Buy-back programs provide users with generous rebates for CPU modules as their processing needs grow. ($995, list price; $1049 with ALR MS-DOS 5.0. 486SX/16 upgrade module, $399) Advanced Logic Research, Inc., 9401 Jeronimo, Irvine CA 92718. (714)581-6770.



AMKLY 386SX TRIMLINE FAMILY

With the goal of providing more affordable network computing, AMKLY announced new 25MHz and 33MHz, 386SX-based AMKLY Stations. These systems are available in four models: Model 1 is diskless, Model 3 contains a 1.44MB 3.5" floppy drive, Model 5 features a 1.2MB 5.25" floppy drive, and Model 35 contains both the 5.25" and 3.5" floppy drives. Other features include 1MB of RAM (expandable to 16MB), two full-size 16-bit expansion slots, 60W power supply, and MS-DOS 5.0. Both software and hardware security features have been added to provide an extra level of defense against misuse and theft. (Prices range from $1095 to $1345 for the 386SX/25 and $1195 to $1445 for the 386SX/33) AMKLY Systems, Inc., 60 Technology Dr., Irvine, CA 92718. (714)727-0788.

PC SOFTWARE

NORICK PAPERLESS OFFICE

The Paperless Office can increase the productivity and usefulness of every home or office PC as well as eliminate the need to store or send paper documents throughout the day. This new integrable software solution creates a seamless computing environment that enables your IBM PC or compatible to handle all of the paper-related chores during the day—combining document imaging with online fax send/receive, an inter-office Quick Note system, online memo pads, document search and manipulation capabilities, and more. It can be implemented in two ways: First, it can be installed under your existing environment, including DOS, DESQview, Windows, etc. Second, because of its own shell architecture, the Paperless Office can serve as the integrating environment itself, giving each user instant access to a variety of DOS-based programs through user-defined paths and command line calls. ($249, single-user version; $495 five-user network version) Norick Software, Inc., 5400 N.W. Grand Blvd., Suite 450, Oklahoma City, OK 73112. 1-800-527-5764.

ALDUS PAGEMAKER DATABASE

PageMaker Database Edition links PageMaker 4.0 for Windows to database management systems via PageAhead, a spreadsheet-like interface developed by PageAhead Software Corp. The Database Edition enables customers to easily query, retrieve, and format data from database files, and place it in publications they produce with PageMaker. Users can combine data from multiple tables, calculate new fields based on any data in a database, and sort the data. This software requires Windows 3.0. The recommended configuration is a 386-based PC with 4MB of RAM, an 80MB hard disk, a high-resolution graphics adapter card, and a mouse. ($995, current owners of PageMaker 4.0 for Windows can buy the Database Edition supplement for $199) Aldus Corp., 411 First Ave. South, Seattle, WA 98104-2871. 1-800-628-2320.

Continued

Systems For Tomorrow ....

Diamond Quality
At Golden Prices

FCC Class 'B' Basic Systems

- ☐ 486-33 w/128K Cache $855
- ☐ 386-40 w/128K Cache $545
- ☐ 386-33 w/32K Cache $545
- ☐ SlimPro Booksize 386SX-25.....$430
- ☐ 386SX-20.....$385
- ☐ 286-20.....$315

* *All systems include motherboard, CPU, 1MB RAM, IDE/IO, 1.2MB or 1.44MB FDD, Case/UL PS, 101-key keyboard*
* ***Free BitFax for Windows software or 2-Button Mouse***
* *1 year parts & labor warranty*
* *Volume purchase discount*
* *Please call for Hard Drive Prices*

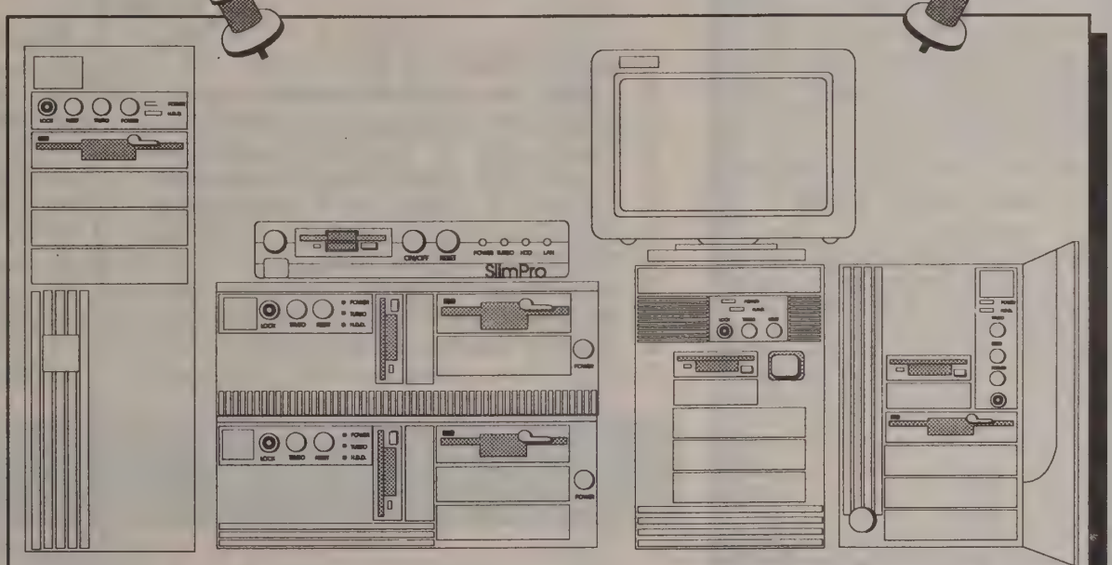
Monthly Special !!!

386SX-16MHz Desktop System

- ❑ 1MB RAM
- ❑ IDE HDD, FDD controller
- ❑ 2 serial ports, 1 parallel port, 1 game
- ❑ 1.44MB floppy drive
- ❑ VGA card
- ❑ 14" color monitor
- ❑ 101-key keyboard

$547

* *Please call for hard drive prices*



Custom Configurations Available

Monthly Special !!!

386-25MHz Desktop System

- ❑ 1MB RAM
- ❑ IDE HDD, FDD controller
- ❑ 2 serial ports, 1 parallel port, 1 game
- ❑ 1.44MB floppy drive
- ❑ VGA card
- ❑ 14" color monitor
- ❑ 101-key keyboard

$1007

* *Please call for hard drive prices*

Monthly Special !!!

286-12MHz Desktop System

- ❑ 1MB RAM
- ❑ IDE HDD, FDD controller
- ❑ 2 serial ports, 1 parallel port, 1 game
- ❑ 1.44MB floppy drive
- ❑ VGA card
- ❑ 14" color monitor
- ❑ 101-key keyboard

$477

* *Please call for hard drive prices*

Miscellaneous

- ☐ 9600/2400 S/R Fax/Modem $69
- ☐ 2400 Modem $39
- ☐ Removable hard disk kit $35

Monitor Combo

- ☐ Relisys1422 14" Non-Interlaced .28 WD 1MB SVGA 1024x768 ..... $445
- ☐ AcerView AV-33 14" 1024x768 .28 OAK 512K SVGA 1024x768 ..... $325
- ☐ AcerView AV-11 14" VGA 640x480 .39 OAK 256K VGA 800x600 ..... $255
- ☐ Relisys RE-9502 14" Mono VGA MGP Card $140

CB

Component Business Inc.
41340 Christy Street Fremont, CA 94538
Sales: 510-651-6256 Fax: 510-651-1932
Tech Support: 510-651-6778 ext.23

Designed, engineered, built and tested in U.S.A.

LEOPARD MI

INTERN

(FORMERLY LEGEND MICR

LYNX

EVERYDAY LOW PRICES

Video Display Card

MGP/MCGP/EGA/VGA $14/24/54/45
Diamond Stealth (1M, 32K).....$279
Diamond SpeedStar (1M, 32K).....$170
Orchid ProDesignerIIs (1M, 32K).....$169
Orchid Farenheit-1280 (1M, 32K).....$269
TSENG LAB SVGA (1M, 72MHz).....$97
PARADISE SVGA 512K/1M.....$79/97
TRIDENT SVGA 512K/1M.....$49/76
OAK SVGA 256K/512K/1M.....$40/49/75

Video Display Monitor

Mono 12"/14" w/MGP card.....$88/108
UMAX SVGA (.28, MultiScan, NG).....$275
CTX SVGA (.28, Non-Interlace).....$315
ADI MicroScan-3E (.28, Non-Inter).....$320
SOCOS SVGA (.28, Interlace).....$279
SOCOS SVGA (.28, Non-Interlace).....$320
NANAO 9070u (16" 1024x768 .28)....$940
NANAO 9080i (16" 1024x768 .28)...$1015
NANAO T560i (17" 1280x1024 .25).$1875
NANAO 9500 (20" 1280x1024 .31)..$1875
RELISYS RE9513.....$280
RELISYS RE9514.....$299
RELISYS RE5155.....$415
Sony 1304HG (14" 1024x768 .25 NI).$562
Sony CPD1604S (17" 1024 .25).....$1075
Sony GDM1936 (20" 1280 .30).....$2475
Seiko CM1440 (Non-Interlace).....$480
Seiko CM1450 (Non-Interlace).....$589
Seiko CM1760LR (17" 1280 .25).....$1265
NEC 3FGX (15" 1024x768 .28).....$675
NEC 4FG (15" 1024x768 .28).....$799
NEC 5FGX (OEM 17" 1280 .28).....$1330
NEC 6FGX (OEM 21" 1280 .28).....$2799
ViewSONIC 4E/5E.....$329/459
ViewSONIC V6 (14" 1024x768 .28)...$355
ViewSONIC V7 (17" 1280 .28).....$1165
ViewSONIC V8 (20" 1280 .31).....$1675

Floppy & Hard Disk Drives

TEAC 1.2MB 5.25" Floppy Drive.....$57
TEAC 1.44MB 3.5" Floppy Drive.....$53
CONNER IDE 40/80/120/200M.....$CALL
Quantum IDE 80/122/245M(LPS)...$CALL
MAXTOR IDE 40/80/200/213M.....$CALL
SEGATE IDE 45/85/120/210M.....$CALL
WD IDE 45/85/125/200M.....$CALL
SCSI & ESDI HARD DRIVE.....$CALL
Removable IDE Hard Disk Kit.....$34

Keyboard, Mouse, & Scanner

MaxiSwitch 101 Keyboard.....$38
KeyTronic 101 Keyboard.....$44
OmniKey 101NI/102/Ultra.....$69/79/99
LOGITECH MouseMan (Serial).....$62
LOGITECH MouseMan (Bus).....$62/66
LOGITECH TrackMan (Serial).....$69
LOGITECH TrackMan (Bus).....$79
LOGITECH TrackMan (Portable).....$99
LOGITECH ScanMan 32GS.....$148
LOGITECH ScanMan 256.....$259
LOGITECH HR Mouse w/Window 3.0..$69
MicroSoft Mouse Serial/Bus.....$84/89
UMAX Handy Mouse (Serial).....$16
ARMOUSE (Serial).....$18
MicroSoft DOS 5.0.....$54
MicroSoft Window 3.0.....$54

LYNX 386DX-33

intel inside

- Intel 80386DX-33 MHz CPU
- 4 MB 70ns RAM expandable to 32 MB
- 64K Cache expandable to 256K
- Teac 1.2MB or 1.44MB Floppy Drive
- 120MB IDE Hard Disk w/controller
- 2 Serial, 1 Parallel & 1 Game Ports
- Real Time Clock/Calendar w/Battery
- Math Co-processor Socket
- 14" SVGA 1024x768 .28 Color Monitor
- 1M 16-bit Trident 1024x768 SVGA Card
- 101-Key Enchanced Keyboard
- Mini Tower Case w/200W UL P.S.

FOR JUST $1295

386DX-40.....add $15

LYNX 486DX-33

intel inside

- Intel 80486DX-33 MHz CPU
- Built-in Math Co-processor
- 4 MB 70ns RAM expandable to 32 M
- 64K Cache expandable to 256K
- Teac 1.2MB or 1.44MB Floppy Drive
- 120MB IDE Hard Disk w/controller
- 2 Serial, 1 Parallel & 1 Game Ports
- Real Time Clock/Calendar w/Battery
- Socket for Weitek Math Co0processor
- 14" SVGA 1024x768 .28 Color Monit
- 1M 16-bit Trident 1024x768 SVGA Ca
- 101-Key Enchanced Keyboard
- Mini Tower Case w/200W UL P.S.

FOR JUST $1595

486DX-50.....add $290
486DX-33 EISA.....add $510

LYNX Upgrade Options (for the above LYNX Systems)

128K Cache.....add $30
256K Cache.....add $60
200MB Hard Drive..add $190
Med Tower 230W....add $30
8 MB RAM.....add $148
16 MB RAM.....add $500
Full Tower 230W.....add $60
Full Tower 300W.....add $110

LYNX Basic Systems

486DX-50 EISA.....$1600
486DX-33 EISA.....$1270
486DX-50 ISA.....$1050
486DX-33 ISA.....$760
386DX-40 ISA.....$460
386DX-33 ISA.....$450
386DX-25 ISA.....$400
386SX-25 ISA.....$335
386SX-16 ISA.....$325

Basic Systems include 1) Motherboard & CPU, 2) 1MB RAM, 3) 64K Cache on DX & MX Systems, 4) Teac 1.2MB or 1.44MB Floppy Drive, 5) IDE 1:1 Interleave 2HD/2F Conttoller Card, 6) 101-key Enchanced Keyboard, 7) Mini Tower Case with 200W UL Listed Power Supply.

For a complete system, you'll need a videc card & video monitor. Other options includ a Hard Disk, I/O Card (Serial/Parallel/Game ports), Mouse, Modem, or a Tape Backup Drive. See the EVERYDAY LOW PRICES Columns or call us for prices.

System Upgrade Options (for the LYNX Basic Systems)

128K Cache.....add $30
256K Cache.....add $60
.....(for 486-50 EISA add $110)
80MB Hard Drive.....add $285
120MB Hard Drive.....add $365
200MB Hard Drive.....add $555
4 MB RAM.....add $111
8 MB RAM.....add $259
16 MB RAM.....add $590
Med Tower 230W.....add $30
Full Tower 230W.....add $60
Full Tower 300W.....add $110

CROSYSTEMS
T I O N A L
SYSTEMS INTERNATIONAL)

ONE YEAR PARTS & LABOR WARRANTY

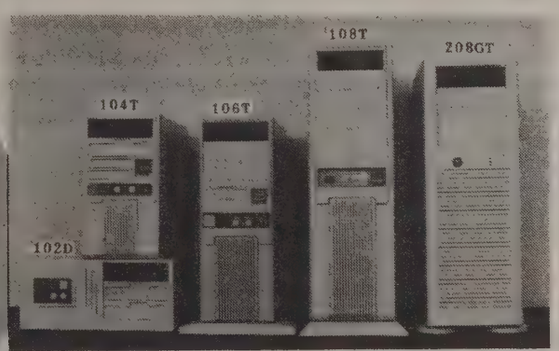
Fastest 486 Motherboard!

Model #: LYNX486CQ

* Landmark Speed: 160.2 @ 33MHz and 168.96 @ 50MHz
* CONTAQ chipset and AMI BIOS
* Designed for system running in 20, 25, 33, 50, and 66 Mhz
* Motherboard compatible with the new INTEL 486DX2 CPU
* Supports up to 32 MB local high speed page mode 256K, 1M, AND/or 4M SIMM module memory on-board
* 100% compatible with DOS, OS/2, XENIX, UNIX and NOVELL Netware Operating Systems
* 64K, 128K, or 256K Write-back/Write-through direct mapped memory cache
* Selectable 0 or 1 wait state for cache memory
* Enchanced performance with on-chip comparator for HIT or MISS decision

Fastest Performance... Highest Quality...
Most Reliable... and Lowest Priced...
Motherboard on the Market TODAY!

All Cases accept baby or full XT/AT motherboards and provide extra drive bays for future expansion. The power supply is UL Approved. The metal frame is re-enforced with the process of Electrolysis to prevent deformation and rust. Please see the EVERYDAY LOW PRICES Column for prices.



EVERYDAY LOW PRICES

Motherboard, CPU, & Memory

LYNX486DX-50 ISA w/ 64K Cache...$169
LYNX486DX-50 ISA w/128K Cache...$189
LYNX486DX-50 ISA w/256K Cache...$209
LYNX486DX-33 ISA w/ 64K Cache...$167
LYNX486DX-33 ISA w/128K Cache...$187
LYNX486DX-33 ISA w/256K Cache...$207
486DX-33 EISA w/ 64K Cache.....$699
486DX-33 EISA w/128K Cache.....$739
486DX-33 EISA w/256K Cache.....$779
386DX-25/33 ISA w/64K Cache.....$136
386DX-40 ISA w/64K Cache.....$138
386DX-25/33 ISA w/0K Cache.....$94
386DX-40 ISA w/0K Cache.....$96
386SX-16 w/CPU & 0K Cache.....$134
386SX-25 w/CPU & 0K Cache.....$144
286-12/16MHz w/CPU.....$66/76
286-20MHz w/CPU.....$82
INTEL & AMD CPU.....$Best
SIMM 256K/1M/4M 80/70/60ns.....$Best

Case & Power Supply

DeskTop-102D (4 exp, 200W PS).....$72
Mini-104T (4 exp 1 hid, 200W PS).....$59
Med-106T (5 exp 3 hid, 230W UL PS).$90
Deluxe-208GT (2 fans, Easy Access Side Doors, 4 exp 3 hid, 230W UL PS).$175
Full-108T (4 exp 7 hid, 230W UL PS).$115
Full-42T (4 exp 5 hid, 220W UL PS)..$109
Full-51T (7 exp 1 hid, 230W UL PS)..$109
Full AT 200W UL Power Supply.....$46
Full AT 230W UL Power Supply.....$53
Full AT 300W UL Power Supply.....$79
Baby AT 200W Power Supply.....$37
Baby AT 200W UL Power Supply.....$41
Baby AT 230W UL Power Supply.....$50

Controller, Interface, & Modem

XT 1:1 MFM/RLL 2HD Controller.....$52/55
XT 1:1 4FD Controller.....$52
AT 1:1 MFM/RLL 2HD/2FD Cont.....$48/65
AT 1:1 MFM/RLL 2HD/4FD Cont.....$65/79
IDE 1:1 2HD/2FD Controller.....$16
IDE 1:1 2HD/2FD w/2S-1P-1G Cont....$25
AT I/O (2S-1P-1G).....$16
Serial (RS232 Interface Card.....$13
Parallel (Printer) Interface Card.....$13
Dual Game Card.....$13
2400 Baud Int/Ext Modem.....$49/84
2400 Baud Pocket Modem.....$82
9600 Baud V.32 Int/Ext Modem...$425/535
9600 Baud FAX/2400 MNP Modem.....$89

Tape Drive & CD-ROM

Colorado 120/250MB TapeDrive.$230/270
Colorado Ext Kit/Controller.....$115/94
Sony CD-ROM (640MB, Ext, w/SW)..$555
Mitsumi CD-ROM (540MB Internal)...$299
CD-ROM Software Package.....$115

Local Area Network

NE-1000/NE-2000 Coaxial.....$85/98
NE-1000/NE-2000 T-Base-10.....$97/107
ARCnet 8/16 Bit Coaxial Star.....$41/69
ARCnet 8/16 Bit Twisted Pair.....$47/79
MAXLAN Starter Kit 8/16 Bit.....$219/239
LANtastic AE-2/AE-3 Starter Kit..$479/549
LANtastic AE-2/AE-3 Adapter.....$219/249

LEOPARD MICROSYSTEMS
N T E R N A T I O N A L
(FORMERLY LEGEND MICROSYSTEMS INTERNATIONAL)

SINCE 1987

All previous valid Legend Microsystems' Warranty is still effective!

Mon.-Fri. 9am - 6pm
Saturday 10am - 5pm
Sunday by Appt. only

2300 Leghorn St.
Suite # 101
Mt. View, California

Tel: (415) 969-8898
(408) 737-8377
FAX: (415) 969-8931

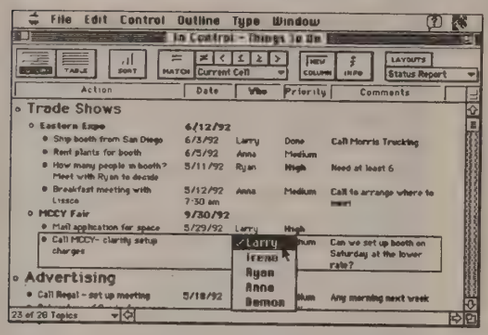
Prices reflect a cash discount and are subject to change without notice.
Not responsible for misprints!

PRODUCT SPOTLIGHT

MACINTOSH SOFTWARE

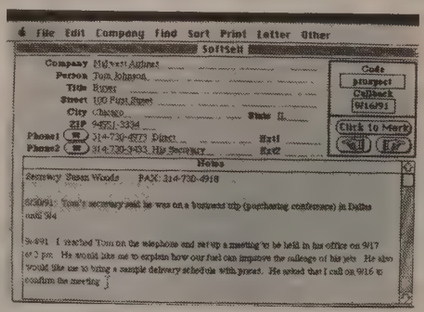
ATTAIN IN CONTROL

In Control is a to-do list manager that helps businesspeople organize projects and things-to-do, and then reorganize, categorize, and prioritize them. Authors Dan Chadwick and Alan Albert, creators of FileMaker, designed In Control to give managers the tools they need to more easily juggle priorities and accomplish more. Based on the familiar outline format, users can collapse and expand their hierarchy of to-do's to show the level of detail they need. In Control goes far beyond traditional outlining software by providing users with the power to create an unlimited number of columns to track due dates, resources, priorities, or anything else. ($129.95) Attain Corp., 48 Grove St., Somerville, MA 02144-2500. (617)776-1110.


File Edit Control Outline Type Window
In Control - Things To Do
Trade Shows
Eastern Expo 6/12/92
Ship booth from San Diego 6/3/92 Larry Done Call Morris Trucking
Rent plants for booth 6/5/92 Anne Medium
How many people in booth? Meet with Ryan to decide 5/11/92 Ryan High Need at least 6
Breakfast meeting with Lisaco 5/12/92 7:30 am Anne Medium Call to arrange where to meet
MDCY Fair 9/30/92
Mail application for space 5/29/92 Larry High
Call MDCY- clarify setup charges Larry Irene Ryan Anne Bemon Can we set up booth on Saturday at the lower rate?
Advertising
Call Regal - set up meeting 5/18/92 Any morning next week
23 of 26 Topics

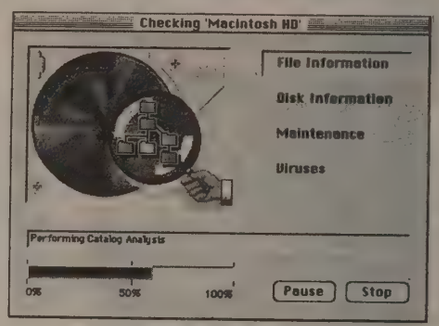
SOFTWARE FOR SALESPEOPLE

SoftSell, designed to be easy to use, can give salespeople an additional five hours of selling time per week, while requiring only fifteen minutes to learn. Tailored to meet the needs of salespeople, SoftSell acts as an electronic secretary, organizing and automating administrative tasks, such as reminders for when to call customers and impending deadlines. This software auto-dials telephone numbers, shows sales scripts and pitches, keeps customer to-do lists, maintains a complete history of customer conversations and customer activity, creates form letters and invoices, and generates sales reports. In addition, SoftSell can find text or dates in past customer conversations and customer activity. ($375) Business Software, Inc., 701 San Conrado Terrace, Suite 5, Sunnyvale, CA 94086. (408)736-3000.


File Edit Company Find Sort Print Letter Other
SoftSell
Company Midwest Airlines
Person Tom Johnson
Title Buyer
Street 100 Park Street
City Chicago
ZIP 94551-3334
Phone1 314-730-4973 Direct
Phone2 314-730-3433 His Secretary
Code prospect Callback 9/16/91
Click to Mark
Notes
Secretary Susan Woods FAX: 314-730-4918
9/10/91: Tom's secretary said he was on a business trip (purchasing conference) in Dallas until 9/14
9/14/91: I reached Tom on the telephone and set up a meeting to be held in his office on 9/17 at 2 pm. He would like me to explain how our fuel can improve the mileage of his jets. He also would like me to bring a sample delivery schedule with prices. He asked that I call on 9/16 to confirm the meeting.

CENTRAL POINT MACTOOLS 2.0

This major new release of MacTools gives users and system administrators complete and automatic data protection, including data recovery, anti-virus, and backup. The user or system administrator can schedule periodic maintenance to occur automatically without user intervention. As part of periodic maintenance, the DiskFix utility can be scheduled to perform disk analysis and repair, including checking for and repairing more than one hundred disk problems. MacTools 2.0 is designed to allow easy network-wide configuration, installation, and ad-

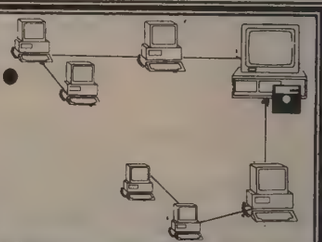


Continued

WORLD-NET Microsystems, Inc.

We understand your networking needs

WE ARE A NETWORKING SERVICES COMPANY



NETWORKING SERVICES

At World-Net Microsystems we are qualified to service your networking needs. Our staff of highly educated professionals have degrees in Computer Engineering, Masters in Computer Engineering, and are CNE Novell Engineering certified. We can provide Networking services whether you purchased the hardware from us or not. We provide the following services:

- Free Consultation • Custom Configuration
- Complete Turn Key Solution • Custom Installation and Cabling
- Network Management • Complete Technical Support

Plus First Month On-Site Service–FREE

NETWORKING SOFTWARE

Novell Version 2.2		Novell Version 3.11	
5 Users	$550	10 Users	$1500
10 Users	1250	20 Users	2100
50 Users	2100	100 Users	4000

NETWORKING PRODUCTS

Ethernet Cards		Arcnet Cards	
8 bit EN 1000	$89	8 bit (Bus/Star/Coax/UTP)	$58
16 bit EN 2000	115	16 bit (Bus/Star/Coax/UTP)	78
10 Base T16 bit	125	8 port Hub-Coax	140
10 Base T8 bit	105	8 port Hub-UTP	170

ALL SYSTEMS FCC APPROVED

486/50 w/256K Cache	$1188
486/33 w/128K Cache	798
386/40 w/64K Cache	498
386/33 w/64K Cache	478
386SX/25	368
386SX/16	338

STANDARD SYSTEM CONFIGURATION

- 1MB RAM on board
- Motherboard w/CPU
- 1:1IDE 2FD/2HD Controller
- 2 Serial, 1 Parallel & 1 Game Port
- 101 Enhanced Keyboard
- Mini Tower or Desktop case w/200W power supply
- TEAC 1.2 or 1.44 MB FDD
- Internal Clock/Calendar
- Math Co-Processor Socket

LAPTOP SPECIAL

386SX/20 MHz Notebook w/2MB w/80MB Hard Disk Drive $1795
FULL Page Scanner Gray 300 Color 3000 w/OCR s/w 570/830

DRIVES

TEAC 1.44MB/1.2MB Floppy Drive	$54/56
Hard Drives & Memory	Best

ADD-ON CARDS

AT I/O (2 Serial,1 Parallel, 1 Game)	$15
IDE w/I/O (2 Serial, 1 Parallel, 1 Game)	21
Future Domain SCSI 2FD/7HD Controller	58
Adaptec SCSI Master Adaptor 1522K/1542BK	168/278
Oak VGA w/256K	38
Trident 9000 Super VGA w/512K	46
Trident 8900C Super VGA w/1MB	76
Pixel Hi-Color Turbo FX-72Hz w/1MB	158

MONITORS

Sony 14" 1304S 0.25mm dp	$565
Nanao 16" 9070 U/9080I	930/1045
14" Super VGA 0.28mm dp	276
Viewsonic 1 14" VGA	230
Viewsonic 4E 14" Super VGA 0.28mm dp	308
Viewsonic 6 14" Non-Interlaced Super VGA 0.28mm dp	365
Viewsonic 5E 14" Non-Interlaced Super VGA .28 mm dp	425
CTX Non-Interlaced Super VGA .28mm dp	325

HOT PRODUCTS

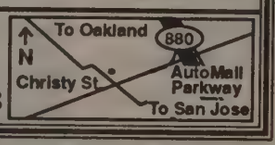
Colorado Tape Backup DJ-10/DJ-20	$199/260
Northgate Omnikey 102/101/Ultra	68/98
Keytronic (Quiet) Keyboard	40
101 Enhanced Keyboard	23
Zoltrix 2400 Int. Modem	46
Zoltrix 9600/2400 Fax/Modem	88
14400 bps FAX/Modem (External)	500
Mastek Handscanner 800dpi DOS version w/OCR	190
Mastek Handscanner 800dpi Windows version w/OCR	220
Trackball (800dpi)	39
Microsoft Compatible serial mouse	12
PS/2 Compatible serial mouse	18

WORLD-NET Microsystems, Inc.

Tel: (510) 770-1158 • Fax: (510) 770-1159

Business Hours Mon.-Fr. 9:00-5:00

43172 Christy St. Fremont, CA 94538



TANSTAAFL

Difficult to pronounce, even more difficult to spell, easy to install, economical to buy and a cinch to use.

"What our customers say . . .

"We have yet to exceed the buffer capacity even though we often drive Freelance graphics at full page 300 dpi resolution."

". . . gone are the memory requirements and control problems associated with local print spoolers."

"The installation is just barely more complex than plug-it-in-and-go."

"I had it running within 20 minutes of receiving it . . ."

"I am writing to let you know of the great success that we have had with your company's product. We currently have over forty people connected into the Easy-Share boxes."

"Since purchasing the Easy-Share for our lazer printer, our Processing Department has been running continuously without a flaw."

What our VAR'S say . . .

"Easy-Share devices stand out for their reliability, capability, and ease of use. We have now configured over 150 computer systems."

"Our clients have been very favorably impressed with your products because of their reliability, ease of installation, flexible configuration and cost effectiveness."

What the editors say . . .

"Priced very affordably."

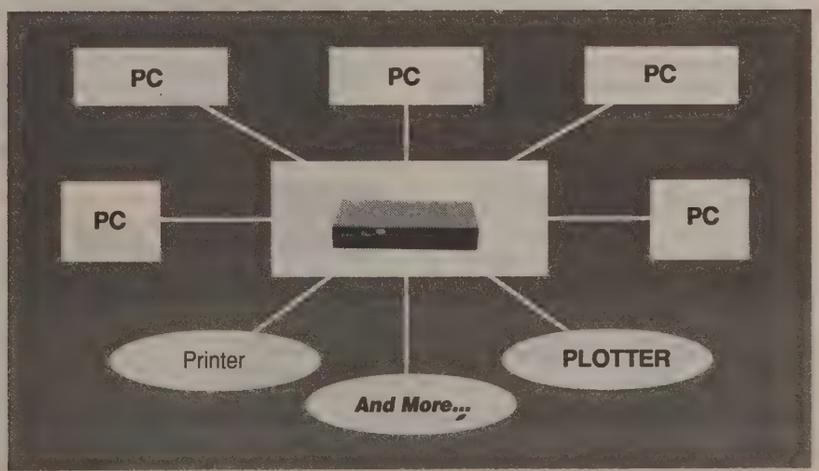
". . . just the right combinations of 'switchability' and buffering to solve most resource-sharing problems."

"It provides all the features most connectivity arrangements need, including software steering."

". . . a down-to-earth , practical solution."

Printer and peripheral sharing solutions.

- *Connect any combinationsof printers, plotters or modems.*
- *Guaranteed compatability with all of your application software.*
- *No more waiting to print.*
- *No software drivers to load or run.*
- *Automatic spooling.*
- *2 year warranty*



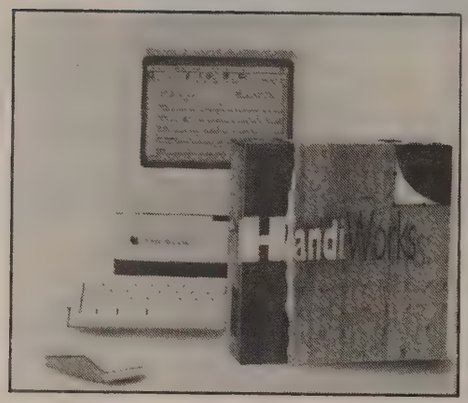
Call 1-800-776-5676 Today

Tanstaafl Mfg., Inc.
1800 Wyatt Drive, Suite 6, Santa Clara, CA 95054
408-748-9330

ministration. ($149; single-user update, $49. An optional subscription plan provides customers four consecutive virus update releases for an introductory price of $49. Single virus updates are $20 plus $5 for shipping) Central Point Software, Inc., 15220 N.W. Greenbrier Pkwy., #200, Beaverton, OR 97006. 1-800-445-0432.

MACVONK HANDIWORKS

HandiWorks is a new all-in-one software application. Requiring only a small amount of memory, it combines a word processor, a spreadsheet, basic drawing and page layout tools, and an Address Manager database. HandiWorks includes templates for commonly used office forms, as well as dictionaries for hyphenation and spell checking in English and Spanish. Dictionaries for ten other languages are also available. Using a frame-based interface, users open to a blank page where frames of text, spreadsheets, and images can be created or imported. The handy Address Manager database is a Desk Accessory that can be accessed as a quick reference. Database information is automatically linked to other HandiWorks documents for easy production of personalized letters, mail merges, invoices, etc. ($175) MacVONK, Inc. (408)973-7100. AppleLink: MACVONK.WEST.



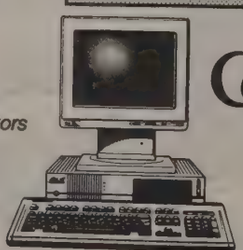
VARs

Your Credit is Approved!

We're making it easy to do business with Copam!
Simply give us a call and ask about our VAR program. To get you started, we'll send you one of our complete systems including one of our innovative low radiation monitors - all on pre-approved, net 15 day terms, for a 15-day free trial.*

Copam offers a full range of systems -enough to make a long term partnership worth looking into.
Copam manufactures a full line of systems and monitors including:
- ❑ Small footprint desktops
- ❑ Upgradable systems
- ❑ EISA and ISA towers systems
- ❑ Ultralight Notebook computers
- ❑ A full line of low radiation monitors

Copam's VAR Program Offers:
- On-site Service
- Price Protection
- Quantity Discounts
- One Year Product Warranty
- National Authorized Service Center Program
- Factory Integration Available

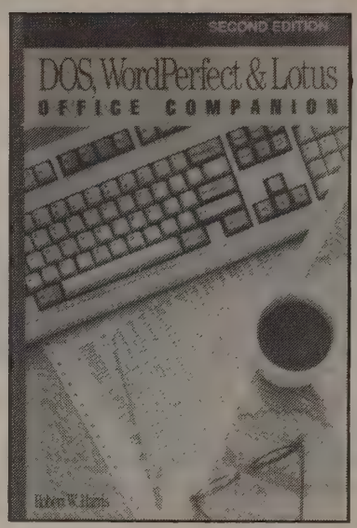


Copam

Call Today!
1-510-623-8911, Ext. VAR

* $1500 limit, pay within 15 days or return the product with no questions asked. Copam reserves the right to change or alter this offer at any time without notice.

BOOKS

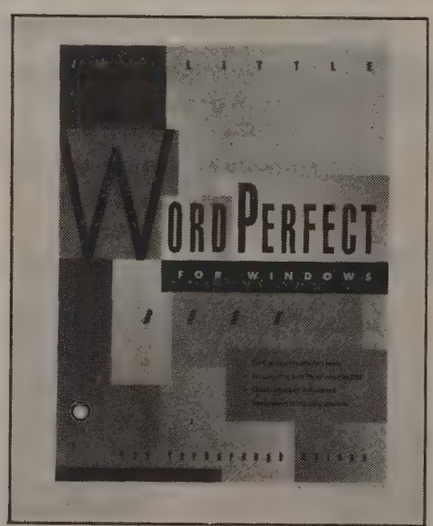


DOS, WORDPERFECT & LOTUS OFFICE COMPANION, SECOND EDITION

DOS, WordPerfect & Lotus Office Companion, second edition is designed to help users make the most of three standard business software programs: DOS (through v5.0), Lotus 1-2-3 (through v2.3), and WordPerfect (through v5.1). Written in a nontechnical style for beginning and intermediate users, author Robert Harris focuses on features and functions that will produce practical results in the shortest time. Each technique was chosen because it either solves a common problem or saves time and effort. DOS Shell, the graphical user interface in 5.0, is thoroughly examined, as are new commands, including UNDELETE, UNFORMAT, DOSKEY, and the improved DIR command. ($19.95) Ventana Press, Inc., PO Box 2468, Chapel Hill, NC 27515.

THE LITTLE WORDPERFECT FOR WINDOWS BOOK

The Little WordPerfect for Windows Book, by Kay Nelson, follows the philosophy behind many Peachpit Press titles—that most people find a clearly organized, well-indexed, and slender book easier to use and just as informative as a fat tome. It covers the basics to use Windows and switch between programs. This book provides a clear introduction to the core features of WordPerfect for Windows, such as revising text, spell-checking, and printing, giving the perfect introduction both for users upgrading from DOS versions of WordPerfect (4.2, 5.0, or 5.1), and for those using WordPerfect for the first time. ($12.95) Peachpit Press, Inc., 2414 Sixth St., Berkeley, CA 94710. 1-800-283-9444.



BUILD YOUR OWN 386/386SX COMPATIBLE AND SAVE A BUNDLE, SECOND EDITION

Build Your Own 386/386SX Compatible and Save a Bundle shows how easily you can build a fast and powerful 386SX or 386DX computer. You don't need any special expertise, technical knowledge, or special tools. After shopping around for the best buys, you merely connect and as-

Continued

Visit our showroom and experience the difference.

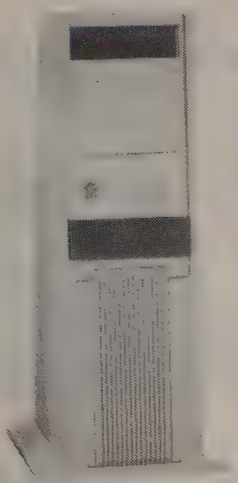
Compare monitors, hard disks, and systems speed before you buy. Talk to our experienced technicians, to help you make your decisions. Many systems are on display to help you select the right configuration for your business needs before purchasing.

The 486 Experts

ZTS 486DX-33 & 50 MHz ISA

Landmark Test = 150/202 MHz
MIPS 14.4/22

$1099



- Optional 64K Cache Expandable to 512K
- Paged Mode Interleaving Controller
- Socket for Weitek 4167 or Intel Co-processor
- Latest Enhanced AMI BIOS
  Built in HD Utility
  Video and System BIOS Caching
  Bootup Password Protection
  Read and/or Write CPU Cache
- Memory Upgradable to 32 MB using 4x9 SIMM-80ns
- 100% Compatible with Novell, Unix, OS/2 2.0, etc.

Basic System: 33 MHz, 4 MB, 1.2 MB floppy, 101 keyboard	**$1099**
SVGA System: 120 MB HD, SVGA card & monitor	**$1859**
Upgrade to 50 MHz: 50 MHz upgrade	**$480**

Fastest 486sx

Best value for your $$
Landmark Test = 114 MHz
See spec above

FREE DOS 5.0 w/ Purchase

The ZTS-486sx motherboard is certified to operate at 33MHz. As a result, it will support higher speed 486sx CPUs when they become available. No need to upgrade the entire motherboard. ZTS-486sx systems are also tested to operate at 25Mhz with carefully selected 20MHz CPUs. We offer this option at no extra cost and guarantee it for a full year.

$599

Best Buy

Basic System: 1 MB, 1.2 MB floppy, 101 keyboard	**$599**
SVGA System: 80 MB HD, SVGA card & monitor	**$1299**
Options: 64K cache expandable to 512K	**$79**
ZTS Super Tower case, 300 Watts, 5kvSP	**$59**

ZTS-486sx 33MHz

150 MHz Landmark 14.5 Mips
20MB/Sec HD Transfer rate.
Top Performance **$3599**

*Best price in USA

- 256K Static RAM for external
- Weitek Co-processor socket.
- 8 Slots, all 16-bit AT and 32-bit EISA BUSS.
- 4 MB RAM, expandable to 64 MB, Simm Modules.
- 300 watt power supply with 5000 volts surge protector.
- 1.2 MB floppy drive, 2 ser/1 parl, 101 keyboard.
- Dual fan for super cooling and CPU heat discharge.
- 320 MB Maxtor hard disk ESDI, 16ms.
- Ultra Stor EISA HD controller, 32-bit, expandable to 4 MB.
- Super VGA card, 1 MB RAM, 1024x768 & 256 colors

ZTS-386 F40 $399

64k Cache 1425Kb/Sec DTR.
Fastest 386 in USA. Landmark = 64MHz

ZTS-386c 33MHz $359

64K Cache, Landmark=55MHz

ZTS-386sx 25MHz $485

16K Cache, expandable to 64K
Faster than any 386DX 25MHz

ZTS-386sx 16MHz $399

All above basic systems come with:
1.2 MB floppy, 101 Keyboard, 1 MB RAM.

Upgrades

SVGA monitor .28mm interlace	$319
SVGA Viewsonic 6, non-interlace	399
SVGA 1MB RAM card, Trident	109
SVGA card by Tseng-Lab Diamond	159
2400 BAUD modem, 5 year warranty	74
Colorado tape back-up 250MB	295
HP-Laser printer III w/toner	1549
Microsoft Windows 3.0 w/Mouse	95
Novell netware and hardware	CALL
Fax-Modem-Voice complete card	369
Maxtor HD IDE 130MB 15ms	399

Z-Technology Systems

441 Grand Ave., So. S.F. CA 94080
(415) 588-3386 FAX (415) 588-9864
Tech-Support 588-9863
Hours: M-F: 10-6pm, Sat.: 10-4pm

- **One year warranty parts and labor**
- **30 days money back for incompatibility**
- **Unlimited free calls tech-supports**
- **24 hours turn-around repair**
- **Six years of experience serving you**

Q: Where has all

A: To almost one

Where would you rather see color–on the page or on your screen?

Every HiQ System includes a 14" Super VGA Color Monitor and 16 bit SVGA card with 1MB of RAM at no extra cost!

Now, while other manufacturers spend increasingly larger sums of money on color advertising, HiQ spends it's money to include a 14" SVGA monitor in every system at no extra cost to you!

intel inside

486-33 LOCAL BUS SYSTEM AVAILABLE AT NO EXTRA COST...CALL FOR DETAILS

HIQ 486/33 ISA $2259

- Intel 80486 33MHz
- 4 MB RAM SIMM Memory
- 256 Cache Memory
- 200 MB IDE Hard Drive
- 1.2 MB and 1.44 MB Floppy Drives
- AMI Bios
- 8 (16) bit Expansion Slots
- **FREE** DOS 5.0 & Windows 3.0 w/ Mouse

HIQ 486/50 ISA $2559

- 250 Watts Power Supply
- Full Tower Chassis
- 16 bit VGA card w/ 1MB RAM VGA Adapter
- Super VGA 14" Non-Interlaced Color Monitor

EISA 33 MHz for $3349
EISA 50 MHz for $3749

Basic System Includes: • 4MB RAM • 1.2 and 1.44 MB Floppy Drives • 2 Serial, 1 Parallel, 1 Game Port

► **30 Day Money Back Guarantee.** You may return your system within 30 days for a no hassle refund.

► **2 Year Limited Warranty.** Every HIQ system comes with a full two-years labor and one-year parts warranty.

► **Credit Cards Same As Cash**

► **Product Development and Testing Laboratory.** HIQ engineers continually test new and time tested components for new applications and survival data. All HIQ Systems comply with FCC certification requirements.

► **Leasing Available**

► **Customized Configurations Available.** We have thoughtfully configured systems to meet the needs of many of our customers. Your highly trained HIQ sales representatives can help you choose the right configuration to fit your specific needs and budget.

► **Lifetime Toll-Free Support**

► **FREE On Site Service Available...** Call For Details

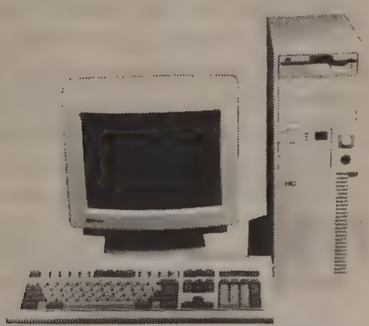
800-827-5836 (Toll Free)

WESTERN SALES SERVICE CENTER
740 Mary Avenue, Sunnyvale, CA 94086, **FAX 408-245-3108**

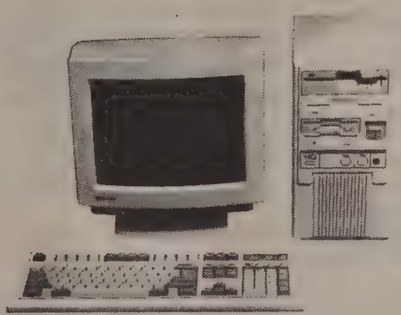
408-245-5836 (Local)

the color gone?

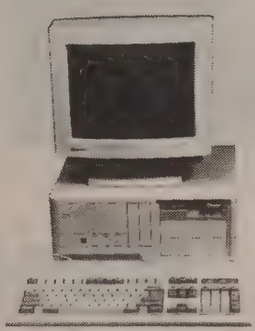
million customers.



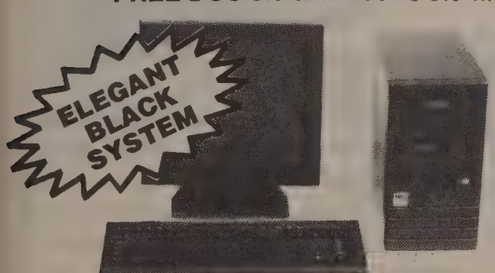
HIQ 386/33 CDX $1549
Intel 80386/33 MHz CPU
Basic System Configuration
120 MB, IDE Hard Drive
64K SRAM Cache
14" SVGA Non Interlaced Monitor
FREE DOS 5.0 & Windows 3.0 w/ Mouse



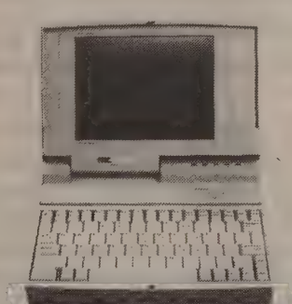
HIQ 386SX $899/949
Intel 80386/16 MHz/AMD 25 MHz CPU
1MB RAM, 1.2 or 1.44 MB FDD
40 MB, IDE Hard Drive
14" SVGA Monitor w/ 16 bit VGA card



HIQ 386/25DX $1255
Intel 80386/25 MHz DX CPU
Basic System Configuration
40 MB, IDE Hard Drive
14" SVGA Monitor w/ 16 bit SVGA card



HIQ 386/40 CDX $1595
AMD 80386/40 MHz DX CPU
Basic System Configuration
120 MB, IDE Hard Drive
64K SRAM Cache
14" SVGA Non Interlaced Monitor
FREE DOS 5.0 & Windows 3.0 w/ Mouse



HIQ 386/25 SX NOTEBOOK $1795
AMD 386/25MHz SX CPU
2 MB RAM, 1.44 MB FDD, 60 MB HDD, Carry Bag, VGA Screen, AA Battery Pack, Cigarette Lighter Power Cord.

Am386 is a trademark of Advanced Micro Devices, Inc.

HiQ has always been known for adding "extra value" to it's systems.

PC MAGAZINE

". . . high cost doesn't always add up to high performance, the HIQ 425i tied for fastest on our processor tests and came in second on the memory tests."
Bruce Brown,
PC Magazine June 11, 1991

". . . HiQ's computers are well contructed and inexpensive . . ."
Bill O'Brien
PC Magazine November 12, 1991

AT Case + 230W Power Supply • 1:1 IDE Interleave Controller • 101 Enhanced Keyboard

Northern California Locations:

South Bay - 740 N. Mary Avenue, Sunnyvale, CA 94086, (408) 245-5836, (408) 245-3108 Fax
Marin County - 2048 Fourth Street, San Rafael, CA 94901, (415) 459-1893, (415) 459-7248 Fax
Stockton - 1588 East March Lane, Stockton, CA 95209, (209) 472-7267, (209) 472-7269 Fax
Sacramento - 11015 Olson Dr., Rancho Cordova, CA, (916) 863-7076, (916) 863-7098 Fax

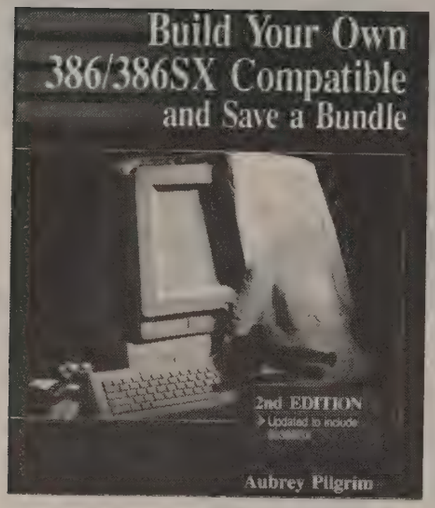
Ordering Information: Shipping and handling additional. Corporations rated 3A2 or better and government accounts are accepted on a 30 net basis. C.O.D. orders over $500 add $10.00 special handling charge. All returns must have prior authorizations from our Customer Service Department (408) 245-5836. All returns must be in original packaging and include all warranty cards and manuals. Incomplete product returns, unauthorized returns and refused shipments are subject to a 20% restocking charge. All prices and specifications are subject to change without notice.

HiQ

800-875-2882 (Toll Free)
EASTERN SALES SERVICE CENTER
6050M McDonough Drive, Norcross, GA 30093, **FAX 404-417-1453**
404-417-1450 (Local)

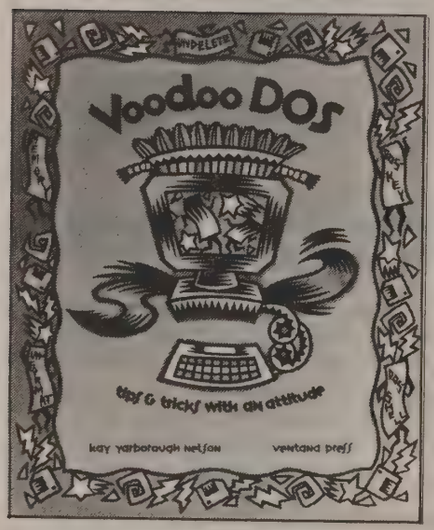
PRODUCT SPOTLIGHT

semble the components into a system. This book contains extensive photographs and easy-to-understand instructions while describing the necessary components, their operations, and how they interact to make up the system. Even if you are not building a computer, this book can help you understand how your computer works. ($18.95) TAB Books, Wincrest/McGraw-Hill, Inc., Blue Ridge Summit, PA 17294-0850.



VOODOO DOS: TIPS & TRICKS WITH AN ATTITUDE

Voodoo DOS shows DOS users (through v5.0) how to put themselves at the center of the DOS universe. Offering more than the usual productivity hints, author Kay Nelson presents common DOS traps, blind alleys, pitfalls, and reveals ways to prevent them. This book shows DOS users how to get started (including upgrading and setup tips and customizing DOS), master the secrets of the Shell, perform command line slight of hand, manage disks and hard drives, and more. A comprehensive index gives readers quick access to tricks on any particular topic. ($19.95) Ventana Press, Inc., PO Box 2468, Chapel Hill, NC 27515. (919)942-0220.



INSIDE DBASE: TIPS & TECHNIQUES

Inside dBASE is a new, 16-page monthly newsletter, published by the Cobb Group, providing tips and techniques exclusively for dBASE users. Readers benefit each month from timely and informative articles. Upcoming issues will feature articles on using dot prompt commands, keyboard shortcuts, creating and using pop-up menus, creating will-designed user interfaces, networking with dBASE, and sharing data with other applications. ($69/year. For a free issue contact the Cobb Group) The Cobb Group, 9420 Bunsen Pkwy., #300, Louisville, KY 40200. (502)491-1900, 1-800-223-8720.

COMMUNICATION HARDWARE

INTEL INTERNAL SATISFAXTION

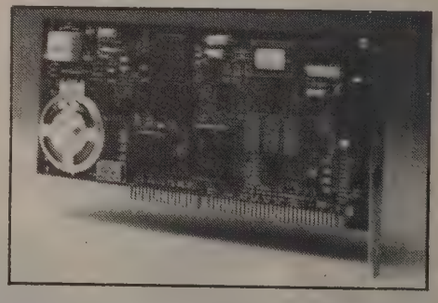
Intel introduced a line of desktop faxmodems that combine data and fax send/receive capabilities with a complete software solution for Windows and DOS users. The new modems include the SatisFAXtion Modem/400, an internal high-speed faxmodem; the Modem/200, a new version of Intel's current SatisFAXtion board; and the Model/100, a low-cost internal faxmodem. All three models come with software that enables faxing directly from DOS and Windows applications, as well as a free copy of DCS's Crosstalk Communicator modem communications software and a special offer on two versions of Intel's advanced fax software for Windows—FAXability Plus and FAXability Plus/OCR software. (Model/400, $499; Model/200, $369; Model/100, $129) Intel Corp., PC Enhancements Division, CO3-11, 5200 N.E. Elam Young Pkwy., Hillsboro, OR 97124-6497. 1-800-538-3373.

FORA 4824SP PORTABLE FAXMODEM

The 4824SP is a 2400bps modem with 4800bps fax transmission capabilities that can connect to any personal computer through a unique single thumb-size screw. This small unit is ideal for laptop computers, as well as desktop computers without sacrificing an expansion slot. In fax mode it can be programmed to operate in the foreground or background. This Hayes-compatible faxmodem comes with BitComm fax and modem software. ($199) Fora, Inc., 3081 N. First St., San Jose, CA 95134. (408)944-0393.

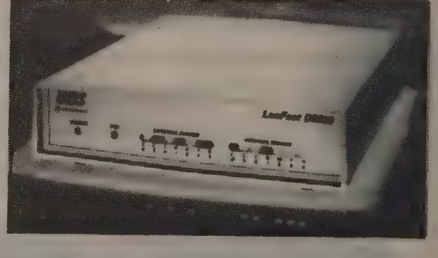
AMT STAR 9642I 9600BPS MODEM

The AMT STAR 9642i 9600bps internal PC modem provides superb performance and versatility for a low cost. By utilizing V.42 error correction and data compression, this modem can achieve up to 38,400bps effective throughput. In addition, V.32 encoding along with V.54 diaognstics ensure proper end-to-end communication in unattended mode over poor quality dial-up lines. The AMT STAR 9642i incorporates several advanced features, including VLSI Technology for high reliability, digital signal processing for accuracy, multiple levels of active filtration, debounce, and other protective circuitry. It is supported by a five-year warranty. ($499) AMT International Industries, Inc., 16571 Gemini Ln., Huntington Beach, CA 92647. (714)375-0306.



UDS MOROTOLA LANFAST

LanFast is a new high-speed network modem that allows a remote user to become a fully functional node on the LAN. It supports NetWare LAN operating system and features a built-in interface for Ethernet. It also includes a LAN adapter that allows it to connect directly to network cabling, eliminating the need for a dedicated PC. The LanFast net-



Continued

OUR GOAL IS YOUR TOTAL SATISFACTION!

FOR YOUR SPECIAL APPLICATION
PLEASE FAX OR CALL YOUR CONFIGURATION

MONTHLY SPECIALS

COMPUTER SYSTEM

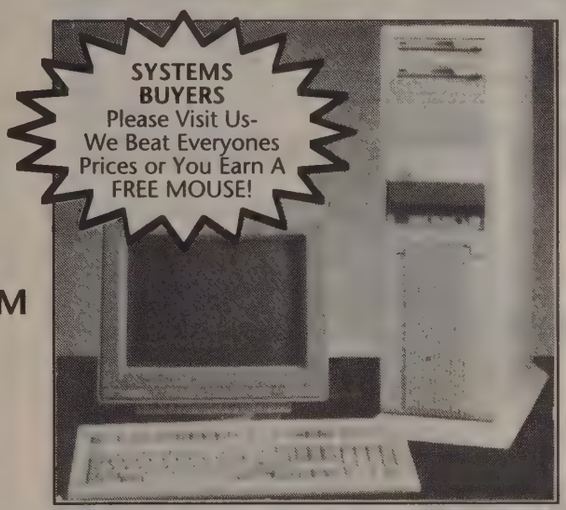
All Systems Include:
- TEAC 1.2 or 1.44 MB FDD
- IDE Controller 2HD/2FD
- Mini-Tower or Compact Case
- 101 Key Keyboard
- 2 Serial, 1 Parallel, Game Port

**** 486 CACHE SYSTEM**
4 MB, 64K Cache, 200 MB HDD
486-50 MHz ISA $1895
486-33 MHz ISA $1595

**** 386 CACHE SYSTEM**
4 MB, 64K Cache, 120 MB HDD
386-40 MHz ISA $1025
386-33 MHz ISA $995

**** 386 NON-CACHE SYSTEM**
2 MB, 100 MB HDD
386-DX25 ..... $845
386-SX25 ..... $775

**** 286 SYSTEM**
2 MB, 80 MB HDD
286-20 MHz $695
286-12 MHz $675



ON-SITE SERVICE OPTION
Available To Most Cities
In Northern California!

HARD DISK DRIVES

40 TO 675 MB
Conner/Quantum/Maxtor
Please Call

SYSTEM UPGRADE

+Middle-Tower Case Upgrade
Add $25
+Full-Tower Case Upgrade
Add $45
+Black Case, Keyboard,
Monitor Available
Please Call

* MISCELLANEOUS

2400 BPS Modem w/MNP5, Internal	$50
2400 BPS Modem/9600 BPS FAX Card	90
250 MB Internal Tape Back-Up	315
M.S. Window 3.0/Z-Nix Mouse	60
Removable Hard Disk Rack	Call
Sony CDU-535 CD-ROM	Call
Network Card & Installation	Call

NOTEBOOK COMPUTER

386SX-20 MHz Intel CPU,
VGA LCD-32 Gray Scales,
Only 6.5 Lbs.
4 MB Exp to 8 MB
60/80 MB Hard Disk
$1595/1695

VIDEO PACKAGE OPTIONS

*12/14" **Monochrome Monitor**
w/MGP Card
$89/109
*14" SVGA (1024x768) .28 dp
Color Monitor w/Trident
256K VGA
$330
*14" Non-Interlaced VESA
.28dp 1024x768 SVGA Color Monitor
WITH GTK2 Accelerator Card, 512K
$410
Trident SVGA Card, 1 MB
$425

MOTHERBOARDS

MADE IN THE U.S.A.
NICE-486 33 or 50 MHz
MOTHERBOARD
Designed And
Manufactured in U.S.A.
32 MB Max On Board
64 MB Max In System
2 Year Warranty
$CALL

386/486
Multi-Purpose Motherboard
Accepts
386DX, 486SX, 486DX
Upgrade From 386 to 486
Just Change The CPU
Without CPU
No Cache $175
w/64K Cache $225

* MOTHERBOARD

486-50/33 MHz EISA, 256K Cache	CALL
486-50/33 MHz ISA, 64/128/256K Cache	CALL
486SX-20 MHz, 64K Cache	CALL
386-40/33 MHz, 64/256K Cache	CALL
386DX-25 MHz, No Cache	CALL
386SX-25 MHz, 16/32/64K Cache	CALL
386SX-25 MHz, or 16 MHz No Cache	CALL
286-12, 16, 20, 25 MHz	CALL

VIDEO CARDS & MONITORS

SUPER VGA CARD WITH
WINDOWS ACCELERATOR
★★★★ BEST BUY PC WORLD
GTK-2
$75
March 1992 PC World
*Run Windows Program Twice The
Normal Pace of Super VGA
*Support Flicker-Free Operation
1024 x 768, 512K
Acumos Chip Set
Sibling To AAmazing Set VGA700

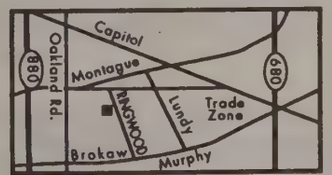
MGP, Monochrome w/printer port	$15
GTK-1, 800x600 VGA 256K	40
Trident 9000 1024x768, 256K	48
Trident 8900 1024x768, 1 MB	90
Paradise 1B 1024x768, 256K	60
Tseng T4000 1024x768, 1 MB	100
Orchid ProDesigner, 2S/Hi-Color, 1 MB	CALL
Orchid ProDesigner Hi-Color, 1 MB	CALL
Orchid Fahrenheit 1280, 1 MB	CALL
AAmazing 12-20" Monitor.12 types	CALL
SONY/NEC/NANAO 14-20" Monitors	CALL

MON-FRI 9:00am-6:30pm
SAT 10:30am-5:00pm

ANOVA

(408) 943-1660
1-800-238-7111
Toll Free Outside California
Fax (408) 943-9660
2287 RINGWOOD AVE.
SAN JOSE, CA 95131

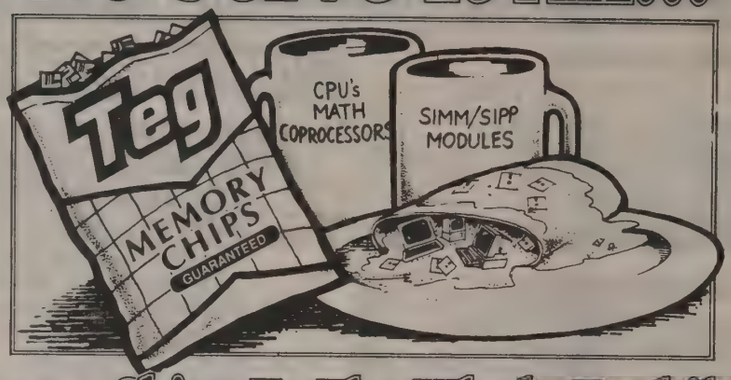
VISA
master charge



Prices Subject To Change W/O Notice

ANOVA MICROSYSTEMS INC.

We Serve It All...



Memory Chips To The Whole Enchilada!

SIMM's

STANDARD SIMMS

1x9-60	$38.25
1x9-70	37
1x9-80	36
1x9-100	34
1x9-120	32
1x8-70	34
1x8-80	33
1x8-100	32
256x9-60	12
256x9-70	11.50
256x9-80	11
256x9-100	10
256x8-80	9
256x8-100	9
4Mx9-80	130
4Mx9-70	135
4Mx9-60	135
4Mx8-70	130

SIMMS FOR APPLE/MAC

MAC II, IIX, IICX, 2 SE/30

1 MB Kit	$45
4 MB Kit	125
16 MB Kit	Call

ZENITH SIMMS

386-25 1 MB Kit	$67
2 MB Kit	145
386 33 1 MB Kit	67
2 MB Kit	140
4 MB Kit	Call

IBM PS2 MODELS

PS2 50Z, 55SX

2 MB SIMM (604)	$105

PS 2

2 MB SIMM (608)	110

Call For Memory For AST Computer, Toshiba Laptop & Other Brands Not Listed

- Please Call For Any Kind Of SIMM Module For Any Brand Not Listed
- SIPP's-Add 50¢ To Above Prices

HP LASERJET

MEMORY BOARD FOR II, IID, III, IIP 0 MB $45

HARD DRIVES

SEAGATE, QUANTUM, CONNER, MAXTOR ANY CAPACITY ..... CALL

WE WILL BEAT THE LOWEST PRICES ADVERTISED !

CPU's

80486 DX-50	CALL
80486 DX-33	CALL
80486 DX-25	CALL
80386 DX-33	CALL
80386 DX-25	CALL
80386 DX-20/16	CALL

CALL FOR AMD CPU's

DRAM's

1 MG-80 DIPP/ZIPP	CALL
1 MGx1-120/100	$3.90/4.25
1 MGx1-80/70	3.95/4.05
1 MGx4-80	20
256x1-120/100	$1.05/1.25
256x1-80/70	$1.50/1.65
256x4-120/100	$4.05/4.10
256x4-80/70	$4.15/4.20
64x4-100/80	$1.50/1.65
64x4-100/120	$1.50/1.75
STATIC RAMS (Cache RAM)	CALL
2x8-20,25, 8x8-20,25, 16x4-20,25	
32x8-20,25, 64x4-20,25	CALL

CALL FOR STATIC COLUMN, ZIPS & SOJ'S

MATH CO-PROCESSOR's

INTEL

80387-33 DX	$199
80387-25 DX	175
80387-20 DX	125
80387-16 DX	110
80387-16/20 SX	125/135

Call For Other Speeds & 287 Co-Processor

IIT

80387-DX/40	$205
80387-33/25	155/150
80387-20/16	120
80387-16/20SX	99/105

CALL FOR ITT, AMD CO-PROCESSOR

• SAME DAY SHIPPING • ALL PARTS NEW & WARRANTEED • PRICES SUBJECT TO CHANGE w/o NOTICE

TEG Micro Technology
46730 FREMONT BLVD.
FREMONT, CA 94538

(510) 490-1734
Fax: (510) 490-2805

PRODUCT SPOTLIGHT

work modem comes with UDS's LanFast communications software that is optimized for dial-in and dial-out access. In addition, it is compatible with other popular PC communications software, including Procomm Plus Network and Crosstalk MK.IV. ($1995) UDS Motorola, Inc., 5000 Bradford Dr., Huntsville, AL 35805-1993. (205)430-8000.

COMPUCOM SUPERMODEM SPEEDSTER

The SuperModem Speedster is a V.32bis high-speed internal modem for under $300. Fully Hayes compatible, this modem comes with V.42 error correction, V.42bis 4:1 data compression, and Microcom's MNP-5, allowing it to produce actual data throughput speeds of up to 57,600bps. CompuCom offers a five-year warranty and a 30-day money-back guarantee. ($279, Speedster Plus with Group Three send/fax capability is $329) CompuCom Corp., 47 Paul Dr., San Rafael, CA 94903. (415)499-7600.

COMMUNICATION SOFTWARE

ICC REMOTE LAN NODE

RLN, or Remote LAN Node, is a remote LAN access product designed to extend corporate networking environments to remote or mobile PC users. It incorporates a set of industry standards in establishing an individual LAN bridge with each remote user. The RLN provides total transparency to the network operating system, enabling remote users to simultaneously access networks running Novell NetWare, Banyan Vines, Microsoft LAN Manager, and other popular local area network operating systems. It is configured in a client/server-type relationship where each remote PC (RLN client) asychronously dials into a locally connected RLN server. This server, which can be any 286- or 386-based machine, can simultaneously manage up to sixteen remote connections. (Prices range from $430 for a two-user system to $6600 for a sixteen-user system) Intercomputer Communications Corp., 8230 Montgomery Rd., Cincinnati, OH 45236. (513)745-0500.

ARTISOFT MODEM SHARING SOFTWARE

ArtiCom modem sharing software lets network users

Continued

Network Products for Less!

Lan Cards

Arcnet

AQUILA 4-in-1 8-Bit (TP Star/Bus & Coax Star/Bus) 89
SMC PC-130 8-Bit Coax 96
SMC PC600WS 16-Bit Coax 141
SMC PC600FS 16-Bit Coax 216
SMC EISA 32-Bit Coax Arcnet or TP Arcnet 743
THOMAS CONRAD 8-BIT Coax Star/Bus 92/106
THOMAS CONRAD 16-BIT Coax Star/Bus 240/270
THOMAS CONRAD MC Coax Star or TP Star 258
TIARA LANCARD/A PC Coax 8-Bit 99
TIARA LANCARD/A PC Coax 16-Bit 190
TIARA LANCARD/A Hiz Bus PC/AT 146/206

Ethernet

AQUILA Coax 16-Bit or MC 155
3COM 3C503-16 ETHERLINK II 16-bit 199
3COM 3C503-16 ETHERLINK II 5 PK (1 Doc/Driver) .. 738
3COM 3C523B ETHERLINK/MC 290
3COM 3C523B ETHERLINK/MC 5 PK 1,263
3COM 3C507 16-BIT ETHERLINK 299
3COM 3C507 5PK, (1 Doc/Drivers) 1,345
INTEL ETHEREXPRESS 16 145
INTEL ETHEREXPRESS 16 5 PACK (1 Doc/Drivers) ... 650
INTEL ETHEREXPRESS 32-Bit EISA 576
NOVELL NE2/2-32A 32-Bit MC 581
NOVELL/EAGLE NE1000 8-Bit 145
NOVELL/EAGLE NE2000 16-Bit 175
NOVELL NE1000 Compatible 8-Bit 125
NOVELL NE2000 Compatible 16-Bit 155
NOVELL NE2/2A 16-bit Micro Channel 271
NOVELL NE3200 32-Bit EISA 820
RACAL ES3210 32-Bit EISA 621
SMC 3016/MC Coax 219
SMC 3016 16-BIT Coax 175
SMC 3008 8-BIT Coax 144
SMC ETHERCARD ELITE 8 Coax 155
SMC ETHERCARD ELITE 16 Coax 190
SMC ETHERCARD ELITE 16 Coax 6 Pack 899
SMC ETHERCARD ELITE/A FOR PS/2 218

Token Ring

3COM TOKENLINK 4Mbps 386
INTEL TOKENEXPRESS ISA 16/4 537
INTEL TOKENEXPRESS EISA 16/4 693
INTEL TOKENEXPRESS MC 16/4 537
TIARA 16/4 16-Bit Token Ring Adapter 534
WD TOKENCARD MASTER 4Mbps 16-Bit 438

10 Base-T Twisted Pair Ethernet

ACCTON 10 Base-T tranceiver (AUI to RJ45) 100
GATEWAY 10 Base-T transceiver (AUI to RJ45) 120
RACAL 10 Base-T transceiver (AUI to RJ45) 110
3COM 3C503-16TP ETHERLINK II 16 16-bit 209
3COM 3C503-16TP ETHERLINK II 16 5PK 825
3COM 3C523B 10 Base-T MC 334
3COM 3C523B 10 Base-T MC 5PK 1,500
AQUILA 10 Base-T 8-Bit 135
AQUILA 10 Base-T 16-Bit 165
AQUILA 10 Base-T MC 160
INTEL ETHEREXPRESS 16 TP 155
SMC 3008 TP 8-Bit Twisted Pair 188
SMC 16-Bit Twisted Pair MC 231
TIARA 10 Base-T 8-Bit 193
TIARA 10 Base-T 16-Bit 210
THOMAS CONRAD 16-BIT w/ RJ45 279
SMC ETHERCARD PLUS 10T 10 Base-T 202
SMC ETHERCARD ELITE 16T 10 Base-T 225
SMC ETHERCARD ELIITE 16T 6 Pack 979
SMC ETHERCARD ELITE 16 COMBO 235
SMC ETHERCARD ELITE 16 COMBO 6 Pack 1,279

External/Pocket Adapters

ACCTON RingPocket TR Adapter 546
AQUILA Pocket Ethernet Adapter BNC 225
AQUILA Pocket 10 Base-T Ethernet (RJ45) 225
AQUILA Pocket Arcnet Adapter 195
DLINK Pocket Ethernet Adapter BNC 250
DLINK Pocket 10 Base-T Adapter 250
XIRCOM Pocket Arcnet Adapter TP 247
XIRCOM Pocket Arcnet Adapter COAX 267
XIRCOM External Ethernet Adapter 413
XIRCOM External Token Ring Adapter 649
XIRCOM Pocket 16/4 Mbps TR Adapter 615
XIRCOM Pocket Ethernet II BNC 345
XIRCOM Pocket Ethernet Adapter 10 Base-T 378

SPECIALS

NOVELL NETWARE LITE Starter Kit

Includes 2 **Novell NetWare Lite v1.0** Network Operating Systems, 2 **Aquila** 16-bit high performance cards for coax ethernet setups OR 1 **Aquila** 16-bit card and 1 **Dlink** internal 4-port concentrator/10 BaseT card combo for 10 BaseT installations, 2 **DR DOS 6.0 (while supplies last)** and full documentation. Cable and terminators are included with coax kit. Easy, fast installation; runs peer-to-peer or dedicated; small RAM overhead.

Ethernet Starter Kit $428
10 BaseT Starter Kit $608
One node bundle (Coax Ethernet) $214
One node bundle (10 BaseT) $224

MULTI-MEDIA CD-ROM SPECIAL!

Buy a **Pinnacle Micro** Internal or External CD-ROM drive and get Game Pack II, World Atlas, and Grolier's Encyclopedia **FREE!**

PCD100 Int. CD-ROM $399
PCD102 Ext. CD-ROM $499

250 MB TAPE DRIVE. Winner of PC Magazine editor's choice. QIC-80 compatible.
Colorado DJ-20 250MB Tape Drive $270

Hubs, Concentrators & Repeaters

ACCTON EtherRepeater 2 AUI/2 BNC 685
DLINK 4-port Internal 10 Base-T Concentrator 325
HTI 8-port 10 Base-T Concentrator 425
AQUILA 12-port 10 Base-T Concentrator 575
EXOS/MICRODYNE 16 port 10 Base-T Concentrator ... 660
FASTLINK 4-Port Internal Arcnet Active Hub 99
FASTLINK 8-Port External Arcnet Active Hub 199
INTEL Internal EtherExpress TPE Hub/ISA 595
INTEL Harmonica for EtherExpress TPE Hub 60
IMC Dual Port Ethernet Repeater BNC/BNC 599
IMC Multi-Port Repeater Chassis 618
IMC BNC Repeater Card for IMC Multi-Port Repeater ... 250
IMC 10BT Repeater Card for IMC Multi-Port Repeater .. 150
NETWORTH Microhub 9-Port Concentrator 449
NETWORTH Microhub 8-Port + 1 BNC Conc. 469
THOMAS CONRAD Smart Hub 8 BNC Ports 499
THOMAS CONRAD Smart Hub 16 BNC Ports 719

Network Utilities

NOVELL NetWare Lite v1.0 89
cc:MAIL DOS platform (user pak req.) 135
cc:MAIL Lan Package for DOS + 8 USERS 135
cc:MAIL Lan Package for DOS + 25 USERS 409
CHEYENNE-MONITRIX Network Mgmt. 595
CHEYENNE Utils for NetWare 286/386 262
CHEYENNE ARCserve tape software VAP 792
CHEYENNE ARCserve NLM V. 4.0 (100 users) 1,265
CHEYENNE ARCserve Solo 185
FRESH TECH Net Vision Network Mgmt. 321
FRESH TECH Modem Assist 1-5 321
FRESH TECH Map Assist 226
FRESH TECH Printer Assist 175
DIRECT ACCESS Network 366
XTREE XTNET Network File Manager 305
PC TOOLS 7.1 w/ Antivirus 10 User Network 858

Uninterruptible Power Supplies

APC UPS Monitor Card for NetWare 80
APC250 (200watt UPS for workstations) 140
APC POWERCHUTE PLUS (VAP/NLM) 99
APC SMART-UPS 400 323
APC SMART-UPS 600 411
APC SMART-UPS 900 650
APC SMART-UPS 1250 844
ELGAR IPX1100SL (1000w) 539
ELGAR NLM for UPS 99

Network Fax

GAMMAFAX CP 769
GAMMANET Software 938
GAMMAPAGE 358
INTEL SATISFAXTION Classic Version AT Bus 399
INTEL NET SATISFAXTION Network Fax Software 653
OPTUS FACSys NetWare Fax Server Software 552
JETFAX II Model 9250 w/PC Send Software 699
JETFAX II Model 9450 w/ 4 MB & Software 1,119

Tape Backup Solutions

COLORADO DJ-10 120MB (New Lower Price) 225
COLORADO DJ-20 250MB *(New Lower Price)*..... 270
TALLGRASS FILESECURE 500i (500MB) 1,058
TALLGRASS FILESECURE 1000i (1 GB) 1,599
TALLGRASS FILESECURE 1300i (2.6 GB) 2,399
MOUNTAIN FS2100 2.2GB Ext. 8MM, SCSI 4,924

Server Based

SYSGEN MAXI 1.3gb int. DAT w/VAP 3,032
SYSGEN MAXI 1.3gb int. DAT w/NLM 3,222
SYSGEN MAXI 1.3gb ext. DAT w/VAP 3,159
SYSGEN MAXI 1.3gb ext. DAT w/NLM 3,348
EXABYTE 2.2 gb int. 8MM w/VAP 3,375
EXABYTE 2.2 gb int. 8MM w/NLM 3,899

LANtastic Products

LANtastic AE-1/T 10 Base-T Adapter 136
LANtastic AE-2 Ethernet Starter Kit 535
LANtastic AE-3 Starter Kit 560
LANtastic AE-2 Ethernet Adapter 215
LANtastic AE-3 Combo Adapter 239
LANtastic 2Mbps Starter Kit 385
LANtastic/AI Adapter Independent(single node) 89
LANtastic Network Eye 199
LANtastic Central Station 410
LANtastic Peer Hub 296
LANtastic for NetWare 305

Macintosh Products

Ethernet

3COM 3C543 ETHERLINK/NB 386
3COM 3C563 ETHERLINK/SE 321
Asante MC+IIE64 Coax/MAC II 222
Asante MC+IIET64 10 BaseT/MAC II 222

Cabling Supplies

RG58/RG62 Rachet BNC Crimper 75
RJ-45 Twisted Pair Crimper 75
RG58 Ethernet BNC-Crimp (100 pak) 125
RG62 Arcnet BNC-Crimp (100 pak) 125
BNC In-Line Splice Connector (10pk) 30
50 Ohm or 95 Ohm Terminators (5pk) 30
Arcnet Passive Hubs (5pk) 50
AT&T 10 Base-T Ethernet Cable (1000' min) 100
Belden PVC RG58 or RG62 Cable (1000' min) 175
Belden 25' RG58 or RG62 Patch Cable 25

Accessories

CASTELLE LANPRESS BNC/AUI 2P/2S ports 625
CASTELLE JETPRESS BNC/10 Base-T 436
INTEL NETPORT II for Ethernet 544
INTEL NETPORT II for 10 Base-T 544
INTEL NETPORT II for Token Ring 775
MICROTEST CABLE SCANNER Kit 1,110
MICROTEST NEXT SCANNER Kit 2,553
MICROTEST PAIR SCANNER Kit for 10 BaseT 1,957
XIRCOM Parallel Port Multiplexor 95
SHIVA NET MODEM/E 9600 BNC 1,699
ZOOM Ext. 9600/v.32/v.42BIS/MNP2-5,10 299
ZOOM Ext. FAX/MODEM v.32/V.32BIS/v.42BIS 325

CD-ROM

HITACHI CD1750S Ext. CD-ROM 760
NEC CDR83M Int. CD-ROM (Incld. CTRL) 636
NEC CDR73M Ext. CD-ROM (Incld. CTRL) 699
PINNACLE MICRO PCD100 Int. CD-ROM 399
PINNACLE MICRO PCD102 Ext. CD-ROM 499

Call For Quotes On Items Not Listed:
Da Vinci Systems, David Systems, Digiboard, Computone, GigaTrend, Interactive Systems, Palindrome, Proteon, Racal Interlan, SCO, SynOptics, Tecmar, Wollongong.

- **All prices listed are cash prices.**
- **All orders shipped C.O.D. from So. S.F.**
- **Fortune 1000 companies and Government P.O. accepted on approved credit. Surcharge will apply.**
- **20% restock fee applies to all non-defective returns and refused shipments.**

FASTLINK

Network Products

1-800-788-LANS

- **Prices subject to change without notice.**
- **We are not responsible for typographical errors.**
- **Shipping & Handling charges will be added to all orders.**
- **Quantity pricing available for 10 units or more.**

Inside 415 Area Code (415) 872-1376

FAX: (415) 872-6634

to share modems, faxes, and other communications devices from any computer on a LAN, including Artisoft's LANtastic and Novell's NetWare networks. It operates as a TSR program, requires less than 6K of RAM, and is unloadable from memory. ArtiCom can be installed on a PC to create modem workstations, modem servers, or a combination of the two. This is independent of whether the PC is a network workstation or server. Users can share up to four modems per ArtiCom server with no limit to the number of modem servers on the network. ($399 per network) Artisoft, Inc., Artisoft Plaza, 575 E. River Rd., Tuscon, AZ 85704. 1-800-TINY-RAM.

LANPROBE NETWORK ANALYZER

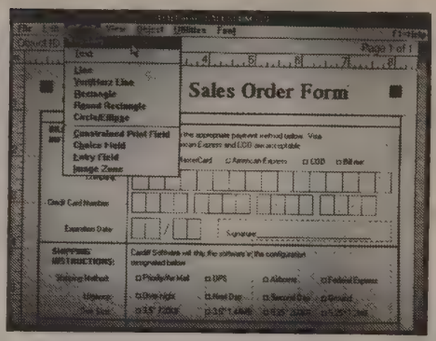
For one-tenth the cost of most hardware network analyzers, LANprobe software installs directly onto any DOS-based PC, AT, 386-, or 486-based computer, and comes standard with an Ethernet host adapter for connection to the network. LANprobe provides protocol support for Novell NetWare 286 and 386 file sharing protocols, Microsoft's LAN Manager protocols, and IBM LAN Server protocols, enabling network managers to diagnose network problems. Users can capture network traffic in one menu, then display captured packets in any of three forms in another, or save them to disk for later analysis. During capture mode, network traffic is displayed by packet type with real-time bargraphs directly on the PC's screen. ($995) General Software, Inc., PO Box 2571, Redmond, WA 98073. (206)391-4285.

PC-TPOST FOR WINDOWS

PC-tPOST for Windows extends the tPOST family of email and file transfer software by Coker Electronics to the Windows environment. This software enables companies to install a powerful email and file transfer system to link geographically remote laptop and desktop PCs using the telephone. The email features include a built-in editor, addressing, transmitting, and mail management functions. Users are able to call into the home office's host tPOST and check for new mail. A mail forwarding feature allows mail in the mailbox to be addressed and delivered to another person. ($149) Coker Electronics, Inc., 1430 Lexington Ave., San Mateo, CA 94402. (415)573-5515.

TELEFORM FOR WINDOWS V1.0

TeleForm for Windows allows users to input hand-printed and check box data directly from a facsimile image to a computerized database. Users can create unlimited types of forms that can be easily filled in using a pen or pencil. Upon completion, anybody can fax the forms back and the information will auto-



matically input directly into a computer database or spreadsheet. The most direct and immediate benefits to user companies from TeleForm are immediate productivity improvements and decreased equipment costs. This software requires a 386 microcomputer with 4MB of RAM, 40MB hard disk space, and a VGA or EGA graphics card. A complete PC or other leading fax board, DOS 3.31 or higher, Windows 3.0, and a mouse or pointing device are also required. ($995) Cardiff Software, Inc., 531 Stevens Ave., Bldg. B, Solana Beach, CA 92075. (619)481-2255.

LAN HARDWARE

TUTANKHAMON LOW-COST MULTI-PORT THIN ETHERNET REPEATERS

The LAN repeater rebroadcasts information to and from all of the connected nodes. Tutankhamon has introduced new low-cost, high-performance, four- and eight-port thin Ethernet repeaters that are, in most cases, half the cost of other comparable products. These repeaters are fault tolerant and auto-partitioning. Built-in segment diagnostics, including jabber protection, automatically partition the LAN, preventing a fault on one segment from affecting any of the other segments. Tutankhamon backs its products with an unconditional thirty-day money-back guarantee and a two-year warranty. (MB400, the four-port model, $499; MB800, the eight-port model, $899) Tutankhamon Electronics, Inc., 2446 Estand Way, Pleasant Hill, CA 94523. (510)682-6510.

ASP JETLAN/P

The JetLAN/P is a low-cost, pocket-sized network adapter that allows any printer with a standard parallel connection to be connected anywhere on a twisted-pair (10BaseT) or thin-wire (10Base2, coax) Ethernet network running NetWare. With JetLAN/P it is no longer necessary for your HP LaserJet printer to be connected to the file server; the printer can now be located near network users, and file servers can be placed in restricted-access locations to ensure network security. It supports up to forty print queues on up to eight file servers, and is compatible with any NetWare-supported node. ($595) ASP Computer Products, Inc., 160 San Gabriel Dr., Sunnyvale, CA 94086. 1-800-9LAN-ASP.

ACCESSORIES

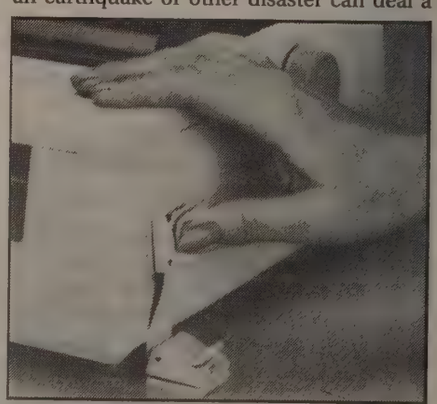
VERSAGRIP DESKTOP FASTENING SYSTEM

Buildings constructed in California after World War II must meet strict earthquake safety standards. However, almost everything inside these buildings remain unprotected. Designed to prevent injury, VersGRIP utilizes industrial strength Velcro to hold computers and other office equipment securely to the desktop. Installation of the fasteners, which contain their own adhesive, is

as simple as peel-and-stick. The high-strength Velcro fastening component allows the user to easily remove the equipment for service or relocation.($7.99 and $9.99) Q-Safety Corp., 2341 E. Foothill Blvd., Pasadena, CA 91107. (818)449-1590.

THUMB LOCK

Damage to critical computer equipment in an earthquake or other disaster can deal a



severe blow to organizations. Thumb Lock fasteners offer an important departure from conventional fasteners in design and fastening technology. They are significantly

Continued on page 182

MANUFACTURER'S WAREHOUSE SALE

GUITAR SHOWCASE

THIS IS IT!

Once a year, Showcase asks our suppliers to clean out their warehouses and send us their buried treasures at

SUPER LOW PRICES!

SALE CONTINUES from APRIL 1 to APRIL 30
NEW STOCK ARRIVING DAILY!
HURRY FOR BEST SELECTION!

Many of these specials in limited supply. Many of these prices are way below Dealers' Cost and in some cases, even below Manufacturers' or Distributors' Cost...
FIRST COME–FIRST SOLD!
Hurry! Supplies are limited to stock on hand. Some items are one of a kind. No orders, layaways, or rainchecks! New stock arriving daily.

THE BIGGEST SALE IN SHOWCASE HISTORY!!

Guitar Showcase has joined forces with the major manufacturers in the music & sound industry to bring you INCREDIBLE SAVINGS on:
•Hot new products •Manufacturers close-outs •Factory over-stocks
•Samples •B & C stock •Factory seconds •Distributors surplus
MANY WITH FULL FACTORY WARRANTY!

HOW DID WE DO IT?

Showcase contacted our suppliers and had them send us everything they could at SUPER BLOW-OUT PRICES so that we could to pass the savings on to you!

HERE'S THE SCOOP:

These companies have warehouses full of products that they want to move NOW! This is the way to help them & our loyal customers at the same time. From time to time, all companies find themselves overstocked with quality products for a number of reasons which include: •New model introductions •Overseas shipping errors •Over-estimation of consumer demand •Lack of storage •Anomalies in production schedules •Labor disputes, etc. •Some of these bargains may have slight surface blemishes (but all are fully operational and ready to go at super savings!) The list could go on forever! Everyone who's ever been in business knows these things happen–it's no reflection on the quality of the products or the companies involved, but it is YOUR CHANCE TO SAVE BIG BUCKS!!!

THIS SALE IS TOO HUGE

for a one-day, two-day, or even a week-long event.

This will be going on for the ENTIRE MONTH OF APRIL! Shipments will be arriving daily from all over the world! Various manufacturers will send their reps to Guitar Showcase to demo their products, answer questions, and solve technical problems. Supplies are limited and many products will be offered on a first come –first sold basis.

•SAME DAY FINANCING AVAILABLE
•ALL MAJOR CREDIT CARDS ARE WELCOMED!

THIS SALE'S SO BIG WE COULDN'T DO IT ALONE!

Guitar Showcase is your mega-music complex but even Showcase's normal $2 million musical inventory is not enough for this sale! We've called in some of the biggest manufacturers, distributors, and factory sales reps of the music industry to bring you the biggest sale in our 27-year history

CHECK THIS INCREDIBLE SALE OUT YOURSELF... ALL THROUGHOUT THE MONTH OF APRIL... ONLY AT SHOWCASE!

YOU'LL ONLY FIND PRICES AS LOW AS THESE AT SHOWCASE!

HERE ARE JUST A FEW EXAMPLES:

•ROLAND U-220
RS-PCM Sound Module
Factory Second NOW $595!

•ROLAND JX-1 Synthesizer
Factory Second NOW $495!

•ROLAND M-120
12-Channel Line Mixer
Full Factory Warranty NOW $395!

•YAMAHA FB-01 Sound Generator
B-Stock NOW $99!

•YAMAHA S8M Studio Monitors
(Some w/surface scratches)
B-Stock NOW $99/PAIR!

•YAMAHA P2250C
Power Amplifier NOW $395!

•YAMAHA SPX900
Digital Effects Processor NOW $495!

•YAMAHA TQ-5
FM Tone Generator NOW $99!

•MIDI CABLES
Factory New, Limit 2 per Customer
NOW $1.99 EACH!

•RHODES VK-1000
Drawbar Keyboard
Full Factory Warranty NOW $1495!

•KURZWEIL K1200
88-Note Keyboard NOW $1595!

•KURZWEIL PRO-76
76-Note Keyboard NOW $1395!

•KURZWEIL 1200 PRO-1
Expansion Module NOW $749!

•KURZWEIL K1200
88-Note Keyboard NOW $1595!

•TASCAM 202WR
Dual Cassette Deck
New Stock NOW $199!

•AUDIO-TECHNICA KMD130S
Microphone
Free Cable included NOW $39.95!

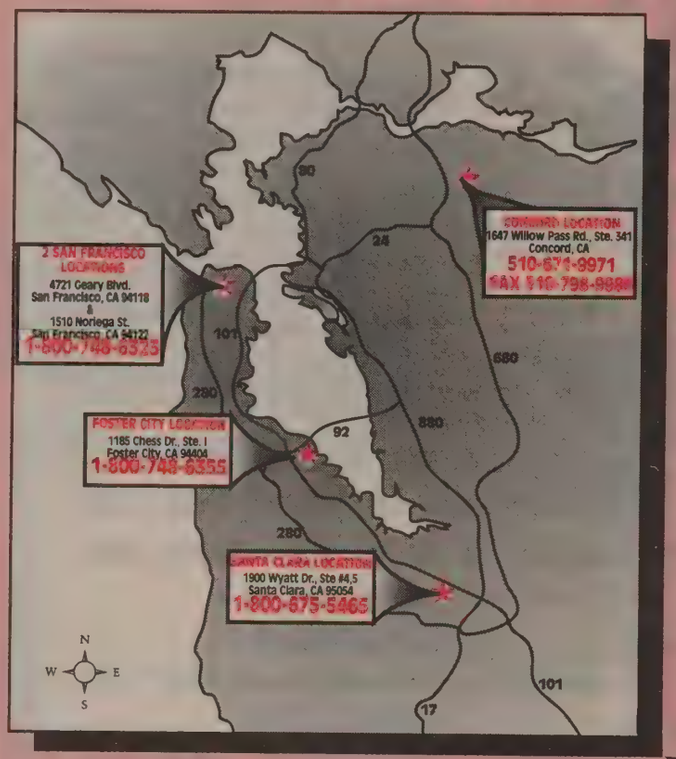
...MUCH, MUCH MORE!
Showcase has hundreds of specials still arriving that are not listed listed here!

GUITAR SHOWCASE

3090 S. BASCOM AVENUE • SAN JOSE • (408) 377-5864
1360 41ST AVENUE • CAPITOLA • (408) 476-4882

MICROLINK DATA SYSTEMS INC.

LEADING SPECIALIZED
INTEGRATOR IN THE BAY AREA!!!



INSTEAD of sinking your hard earned dollars into an expensive brand name, you should consider the VALUE that you really get. As a leading Bay-Area computer retailer, Microlink has five store-front offices with professionals who can help customers to get the BEST VALUE: Price, Quality, & Service. That's where Microlink has the high-tech edge!!!

WE only talk about QUALITY PRODUCTS. Microlink's customers know this very well as our computers work hardest and last longest. WE ARE THE BEST -- when image and reputation are at stake! So call us toll-free and be part of the growing number of satisfied customers worldwide who found that Microlink is a business that cares about their customers.

OUR satisfied customers include:
NASA, Lawrence Laboratories , Stanford University, California State University, Miles Laboratory, and many more.....

ORDER TODAY, YOU GET
Free
3-Button Hi-Resolution Mouse
or Power Center w/ Surge Protection
or Hard Disk Drive Mounting Kit

386DX-33MHZ / 32K CACHE NOTEBOOK

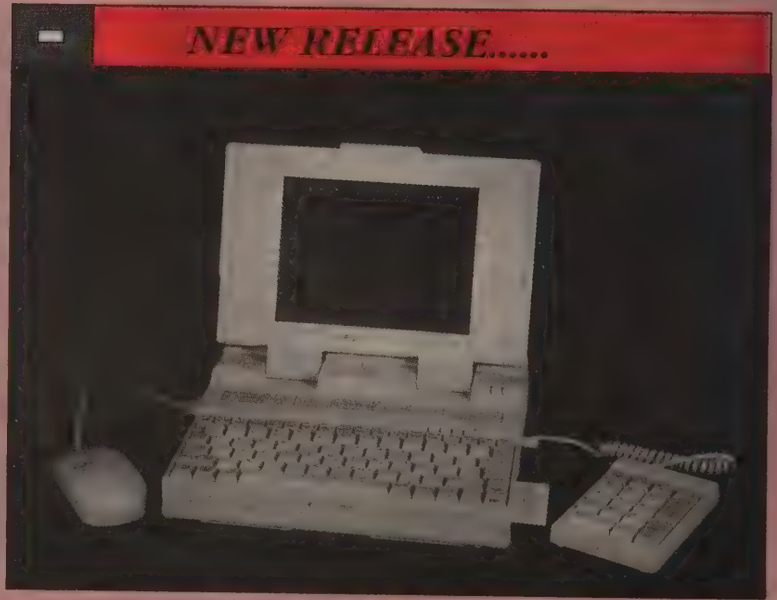
- Weight: 6 lbs; Dimension: 11"x8.5"x2"
- 4MB Upgradeable to 16MB
- 100MB 17ms Hard Drive
- 86 Key with 12 Function Keyboard
- Arrow Key Style: Reverse " T "
- 1.44 MB Int. Floppy Drive
- 1.2 MB Ext. Floppy Drive Optional
- 640x480 LCD with 32 Gray Scales
- 1 Serial and 1 Parallel Ports
- AT Bus for Docking Station
- 800x600 Ext. Monitor Port
- Numeric Key Pad
- Rechargeable Battery Pack
- 100/240 AC/DC Adaptor
- Luxury Carrying Case
- User Manual & Documentation

$2495

OPTIONAL ACCESSORIES

• Battery Charger	$ 30
• Battery Pack	$ 85
• Automobile DC Adaptor	$ 50
• External Fax/Modem Pocker	$175
• External Ethernet Adaptor	$195
• Docking Station	$195

NEW RELEASE.....



Monday through Friday 9:00 am to 6:00 pm Saturday 10:00 am to 5:00 pm

SAN FRANCISCO

1-800-748-6323

FOSTER CITY

1-800-748-6355

SANTA CLARA

1-800-675-LINK

486-50/33MHz 256K of Cache System

- 6-Bay Full Tower with Speed Display
- AMI BIOS with Built-in Setup Utilities
- 256K of 25ns External Cache Memory
- 4MB of 70ns RAM exp. to 32MB
- 210MB 15ms HD w/ 64K Cache
- TEAC 1.2MB Floppy Drive
- TEAC 1.44MB Floppy Drive
- Trident SVGA Card with 1MB of RAM
- SVGA Color Monitor (0.28mm; 1024x768 NI)
- 101 Enhanced-Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- WEITEK Math-CoProcessor Socket
- 8K On-Chip Burst Mode Utilization

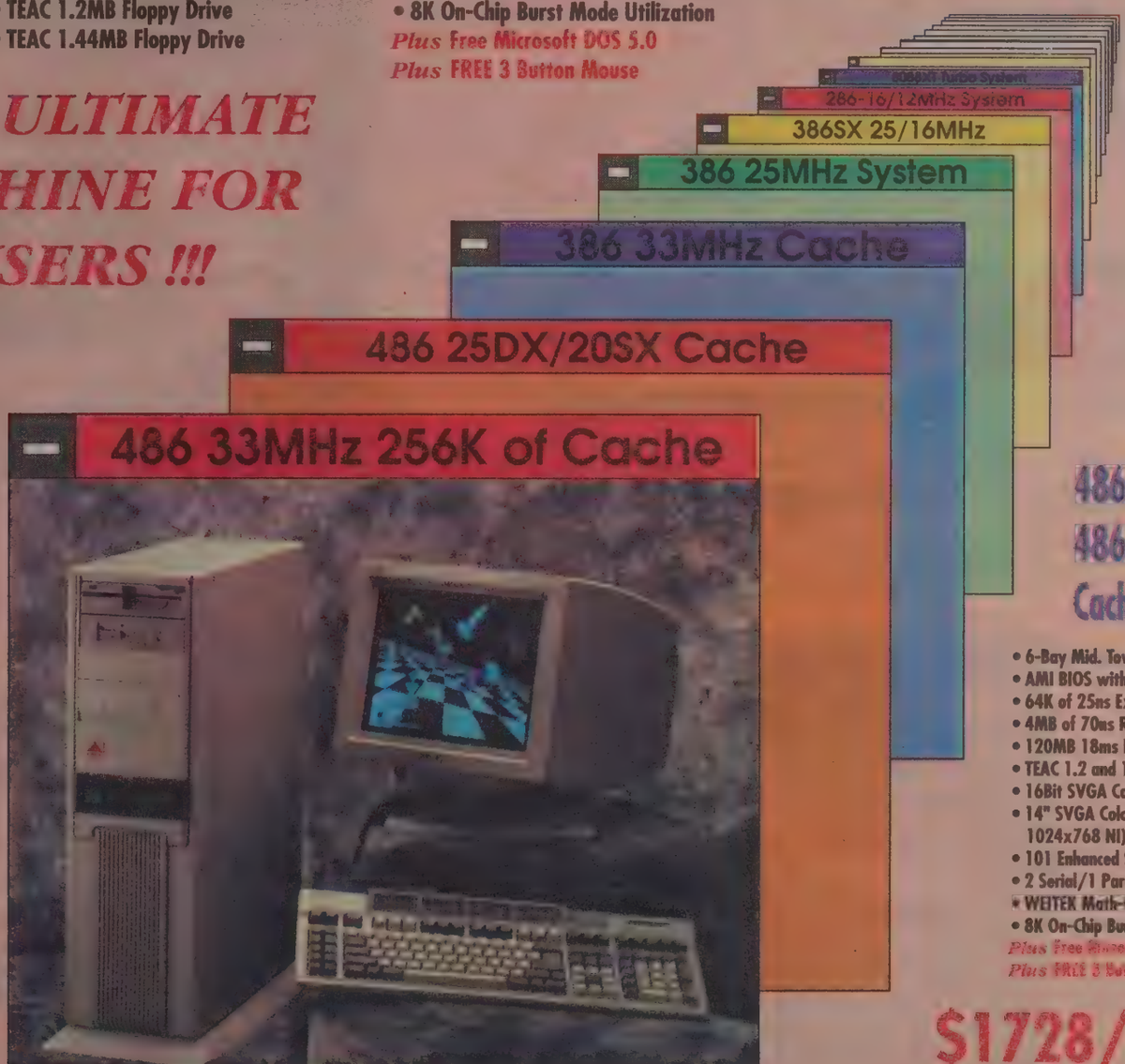
Plus Free Microsoft DOS 5.0

Plus FREE 3 Button Mouse

33MHz... $2,088

50MHz... $2,588

THE ULTIMATE MACHINE FOR PC USERS !!!



486-25DX 486-20SX Cache System

- 6-Bay Mid. Tower with Speed Display
- AMI BIOS with Built-in Setup Utilities
- 64K of 25ns External Cache Memory
- 4MB of 70ns RAM exp. to 32MB
- 120MB 18ms HD w/ 32K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- 16Bit SVGA Card w/ 1MB of RAM
- 14" SVGA Color Monitor (0.28mm; 1024x768 NI)
- 101 Enhanced Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- WEITEK Math-CoProcessor Socket
- 8K On-Chip Burst Mode Utilization

Plus Free Microsoft DOS 5.0

Plus FREE 3 Button Mouse

$1728/1628

UNBELIEVABLE!!!

386-20/16MHz Notebook

- Weight: 5.6 Lbs; Dimension: 11.5"x8.5"x2"
- 2MB of RAM Upgradable to 4MB
- 1.44MB F/DD & 20/40/60MB 25ms H/DD
- Rechargeable Battery and Adapter
- 640x480 LCD with32 Grey Scales
- 82-Key Keyboard with 101-Key Emulation
- Serial, Parallel, Ext. VGA Ports
- Luxury Carrying Bag Included

Plus Free Microsoft DOS 5.0

16MHz/2MB-20MB	$1475
20MHz/2MB-40MB	$1595
20MHz/2MB-60MB	$1695

Notebook Special!!!

30 Days Money-back Guaranteed

MICROLINK

QUALITY.....PERFORMANCE....

Authorized Novell Reseller NOVELL | SCO THE SANTA CRUZ OPERATION | OS/2 | AUTOCAD

386-25MHz SYSTEM

- 4-Bay Mini-Tower Case with Speed Display
- 1MB of 70ns RAM exp. to 16MB
- 42MB 25ms HD w/ 8K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- Video Card and Monitor
- 101 Enhanced Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- Math-CoProcessor Socket

Plus Free Microsoft DOS 5.0
Plus FREE 3 Button Mouse

MONO ... $838
SVGA..... $1088

UPGRADE OPTIONS

STORAGE:	42MB to 80MB	$95
	80MB to 120MB	$75
	120MB to 210MB	$245
DISPLAY:	VGA to SVGA	$95
	SVGA to NI-SVGA	$45
	Trident to Orchid II	$75
	Orchid II to IIs/sierra	$55

386-40 / 33MHz SYSTEM with 64K of CACHE

- 6-Bay Mid. Tower Case with Speed Display
- 64K of 25ns External Cache
- 4MB of 70ns RAM exp. to 32MB
- 120MB 18ms HD w/ 32K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- 16Bit SVGA Card w/ 1MB of RAM
- 14" SVGA Color Monitor (0.28mm, 1024x768)
- 101 Enhanced Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- Math-CoProcessor Socket

Plus Free Microsoft DOS 5.0
Plus FREE 3 Button Mouse

33MHz..... $1458
40MHz..... $1498

MONDAY through SATURDAY 9:00AM to 6:00PM

SAN FRANCISCO	FOSTER CITY	SANTA CLARA
1-800-748-6323	1-800-748-6355	1-800-675-LINK

SERVICE.....SATISFACTION

286-12MHz 42MB SYSTEM

- 5-Bay Baby Desktop Enhanced Case
- 1MB of 70ns RAM exp. to 16MB
- 42MB 25ms HD with 8K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- Video Card and Monitor
- 101 Enhanced Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- Zero Wait State Operation
- Math-CoProcessor Socket

Plus Free Microsoft DOS 5.0
Plus FREE 3 Button Mouse

MONO $588
VGA-MONO $648
VGA $748

WARRANTY

- 1 Year Parts
- 2 Years Mainboard
- 3 Years Labor
- 30 Days Money Back
- Lifetime Support
- On-site Service Option

386sx & 286 Systems

PLASMA/LCD PORTABLE

- PC III Gas Plasma/LCD Portable Case
- 1MB of 70ns RAM
- 42MB HD 25ms with 8K Cache
- TEAC 1.2 and 1.44 MB Floppy Drives
- 640x480 Pixel Graphic Display
- SVGA/VGA on External Display
- High Contrast Ratio 12:1 (150:1 Optional)
- 110/220V Auto-Switch Power Supply
- Heavy Duty Carrying Bag Included

Plus Free Microsoft DOS 5.0
Plus FREE 3 Button Mouse

386-25DX ..... $1728 / 1528
386-33 64K ..... $1888 / 1688
486-33 256K ..... $2228 / 2028
VGA plus(150:1)... +$250

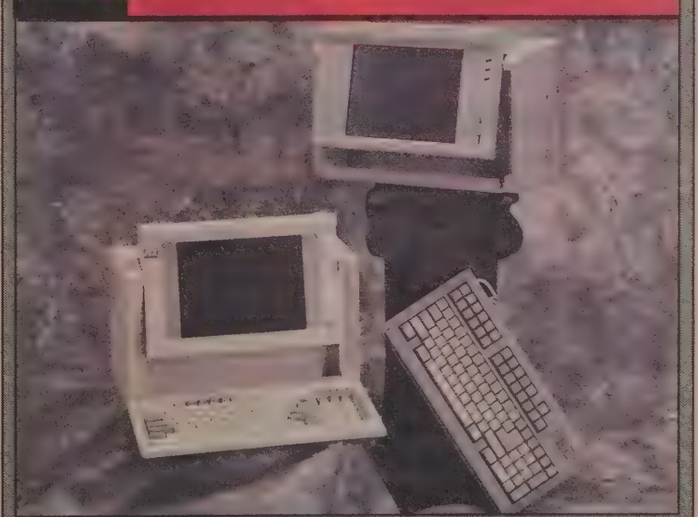
386SX - 25 /16MHz

- 5-Bay Baby Desktop Enhanced Case
- 1MB of 70ns RAM exp. to 16MB
- 42MB 25ms HD with 8K Cache
- TEAC 1.2 and 1.44MB Floppy Drives
- Video Card and Monitor
- 101 Enhanced Style Keyboard
- 2 Serial/1 Parallel/1 Game Ports
- Zero Wait State Operation
- Math-CoProcessor Socket

Plus Free Microsoft DOS 5.0
Plus FREE 3 Button Mouse

MONO $708/668
VGA..... $868/828
SVGA..... $948/908

PLASMA / LCD



CALL FOR CUSTOMIZED CONFIGURATION.....

ORDERING INFORMATION:
MasterCard and Visa Accepted. No surcharge on credit card orders. Leasing available to qualified customers. Shipping and handling are additional. Corporations rated 3A2 or better and governments accounts are accepted on a net 30 basis. C.O.D. orders add $10 special handling charge. Call for special UPS Red/Blue terms. AK and HI add 5% to total order to cover P&I and insurance. No sales tax outside of CA. Products labeled FREE on advertising are not covered by warranty. All returns must have RMA# issued by our Customer Service Department (415-571-5193). All returns must be in original packaging and include original invoice, warranty cards, and documentation. Incomplete product returns, unauthorized returns and refused shipments are non-refundable or subject to a 20% restocking charge. Refunds will be granted less deductions on: freight, insurance, and corresponding charges related to the payment

Continued form apge 176

stronger—restraining weights up to 200lbs. per fastener—with unlimited adjustment to equipment size and strength, are adaptable for use in vehicles, and meet all technical requirements for hospital, laboratory, and clean room applications. ($10) Fastening Solutions, Inc., 15236 Burbank Blvd., Suite 101, Van Nuys, CA 91411. (818)994-6398.

REVIEWS

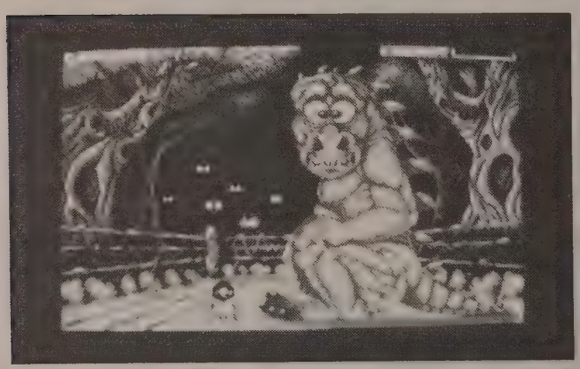
GAME REVIEWS

By Mike Markowitz

PREHISTORIK

Programmed By: Oliver Diaz
Published By: Titus Software
For: MS-DOS (512K, EGA/VGA/Tandy 16-color graphics, Adlib or MT-32 audio card), Amiga and Atari ST versions also available
List Price: $49.95

Prehistorik is the perfect game for days when you just want to pick up a club and beat somebody senseless. This French import is a



charming cartoon-like arcade game in which you are a caveman waddling across a Neolithic landscape, hunting for food and collecting bonus items. You climb up ladders and descend into caves. You hit things with your club, including the Turtosaurus and the deadly Pteriyaki. They hit back, until you run out of lives. The quality of the animation compares favorably with the best 16-bit Nintendo and Genesis stuff I've seen. The game has a cute sense of humor. It's silly. I liked it.

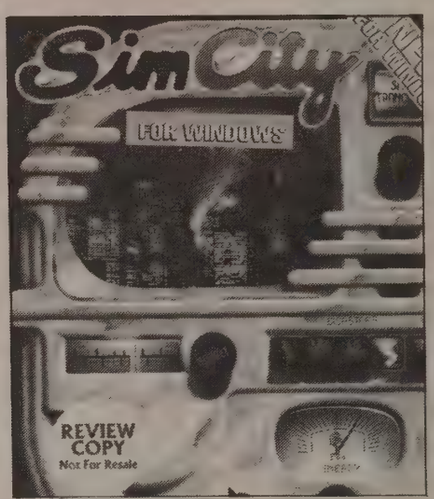
The 3.5" disk is copy-protected in a way that made it impossible to install on my hard drive. How quaint. Documentation consists of a colorful little 16-page booklet.

You really need a joystick to get the most out of this one, although keyboard control is, just barely, possible. (Titus Software, Inc., 20432 Corisco St., Chatsworth, CA 91311. 818/709-3692)

Graphics and Animation: 8
Sound: 7
User Interface: 6
Overall Play Value: 7

SIMCITY FOR WINDOWS

Published By: Maxis
For: Microsoft Windows 3.1 (requires at least 2MB of RAM, supports EGA and VGA)
List Price: $59.95



It is hard to see much advantage in porting the classic "software toy" SimCity ("over 250,000 sold") to the Windows environment, but it's inevitable—people want everything now in a Windows version, and the market responds to what people want. Maxis wisely decided to postpone the release of the new version until Windows 3.1 ships, to ensure compatibility and take advantage of improved performance and (let's hope) reliability.

As mayor of SimCity running under Windows, you will be able to jump in and out of other applications, if you think a spreadsheet or database will help you to fight crime, unemployment, and pollution. The simulation has a new Control Bar that lets you set bookmarks that zoom you to any area of city at the click of a mouse button. The tool boxes are now floating tool palettes that can be moved out of your way on the screen.

Maxis has done a good job ensuring backward compatibility. The Windows version can use the add-on Graphics Sets designed for earlier versions, and it can read maps designed with the SimCity Terrain Editor. The package includes 3.5" and 5.25" disk formats, a quick reference card, and a 72-page manual with a very readable essay on the history of City Planning.

I highly recommend SimCity for computer-oriented high school or college teachers of urban studies, economics, politics, or social science. Only an interactive simulation like this can really communicate the way a complex system works—where your brilliant, simple solution to one problem may create new problems or make existing ones worse. (Maxis, Inc., 2 Theatre Sq., Orinda, CA 94563-3346. 510/254-9700)

Graphics and Animation: 8
Sound: NA
User Interface: 8
Overall Play Value: 7
Educational Value: 9

BLADE

Designed By: Mark Fortuna and Greg Onychuk
Published By: Leviathan
For: Macintosh (requires minimum 640 x 480 8-bit color monitor and 2MB free RAM, 12MB of hard disk space, System 7 friendly)
List Price: $99.95

"Here's a hint about playing the game. Practice, practice, practice. We did not design BLADE to be easy..."

This is an understatement. BLADE is, by far, the most difficult arcade-type game I have ever seen. Since the years have not been kind to my hand-eye coordination, I asked some very young, very Macintosh-savvy gamers to have a try. None of them could get off the first screen.

"Creatures...Defeat or avoid them, but remember, some carry keys. Note: There are some creatures that cannot be destroyed."

BLADE is a visually and sonically stunning game that sets a new size record for Macintosh entertainment software. The compressed program files are installed (by a standard StuffIt installer) from six high-density disks. The complete package takes up 12MB of hard disk space; but you can leave out the sound files if your free space is limited. Documentation consists of a slim booklet.

BLADE is a classic arcade action game. You use simple keyboard controls to move an animated figure through a multilevel psychedelic landscape, slashing away at creatures of all kinds. Although a mouse is a very poor substitute for a joystick, keyboard controls somehow seem completely wrong for a Macintosh game.

The screens are richly detailed and lovingly drawn, but the animated figures (on the 13" Apple monitor) seem rather small.

Leviathan's next game, tentatively called Dragon Boy, is scheduled for summer release. I hope the very talented design team rethinks their idea of an appropriate level of difficulty for Macintosh entertainment software. (Leviathan, Inc., 31201 Chicago Rd. S., Warren, MI 48093-5527. 313/826-3560)

Graphics and Animation: 9
Sound: 9
User Interface: 3
Overall Play Value: 2

Continued

PC TEAM

Experience the Difference!

At P C TEAM we pride ourselves on our commitment to excellence in customer service. A commitment which benefits you, the customer, by providing:

Price

Satisfaction

Service

Value

We have an experienced team available to answer your questions, assist you in system design or integration.

Call TODAY 408-441-0950 or FAX your order 408-441-0845

Tech Support: 408-441-6888
Customer Service: 408-441-6889

Hours: M-F 9:00-6:00pm
Sat. 11:00-3:30pm

- **On-line Technical Support**
- **Computer Repair**
- **Troubleshooting**
- **Hardware Installation**
- **Software Installation**
- **Upgrades**
- **1 Year Warranty on all items with advertised prices**
- **Corporate Accounts Available**

P C TEAM is conveniently located at:
2239
Paragon Drive
San Jose 95131

© 1992 P C TEAM

MEMORY

256Kx9-80/-70	$11/12
1Mx9-80/-70	38/39
4Mx9-70/-60	145/155

MATH ** COPROCESSOR's

- Weitek 487DX-33
- Intel 387DX-33
- Intel 387SX-20
- Intel 387SX-16

CPU's **

- Intel 486DX-50
- Intel 486DX-33
- Intel 486SX-20
- AMD 386DX-40
- AMD 386DX-33
- AMD 386DX-25
- Intel 386DX-33
- Intel 386DX-25
- AMD 386SX-25
- Intel 386SX-20
- Intel 386SX-16

SYSTEMS*

486-33/64K EISA	$1418
486-33/256K	898
486-33/64K	858
386-40/128K	628
386-40/64K	**
386-33/64K	**
386-25	**
386SX-25	378
386SX-16	348

*All Basic Systems are Configured with:
- Mother Board w/CPU
- IDE 2H/2D Controller
- Teac 1.2 or 1.44 FD
- Math Coprocessor Socket
- 1MB RAM on Board
- 2S/1P/1G Port
- AT Case w/220 PW
- 101 Keyboard

MOTHER BOARDS

486-50/256K	$ **
486-33/256K EISA	1248
486-33/256K ISA	688
486-33/64K	638
386-40/64K	358
386-33/64K	328
386-25	**
386SX-25	**
386SX-16	**

HARD DRIVES**

Conner	Maxtor
40MB/28MS/IDE	80MB/17
80MB/18	120MB/15
120MB/18	200MB/15
170MB/16	340MB/15
200MB/16	
500MB/15	**Quantum**
	105MB/15
	120MB/15
	240MB/15

**Call for Best Price

MONITORS

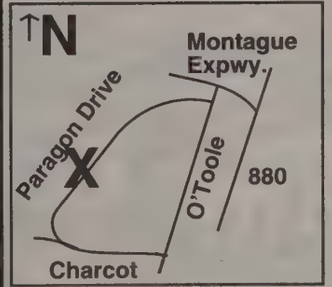
12" Mono w/MGP Card	$88
14" Mono w/MGP Card	108
Standard VGA 640 x 480	248
Super VGA 1024 x 768 .28	278
Super VGA 1024 x 768 .28 Non-Int	378
NEC 3FGX (15" 1024 x 768)	**
NEC 4FG (15" 1024 x 768)	788
NEC 5FG (20" 1280 x 1024)	**
Sony 1304	565

VIDEO CARDS

Oak VGA 256K (800 x 600)	$36
Oak VGA 512K (1024 x 768)	48
Trident 8900C 1 MB (1024 x 768)	78
Tseng Labs ET 400A x 1MB	108
Orchid Prodesigner IIs w/1M + Hi color	**
Orchid IIs/Fahrenheit 1280 w/1MB	**

KEYBOARDS

101 Enhanced Keyboard	$30
Maxiswitch	36
Keytronics	44



MISCELLANEOUS

Tape Backup 120MB/250MB	235/325
Backup Drive Controller (FC-15)	$185
Backup Drive Controller (FC-10)	85
Teac 1.2/Teac 1.44 Floppy Drives	59/57
KE-10 Ext. Kit w/o Controller	75
AB-11 Cable	38
Mouse 9/24 Pin	23
Logitech Mouseman ser/bus	63/68
Logitech Scanman - 256GX	275
DOS 5.0	45
Sony CD-ROM	399

Prices subject to change w/o notice
Not responsible for typographical errors.
All brand names shown above belong to their registered owners

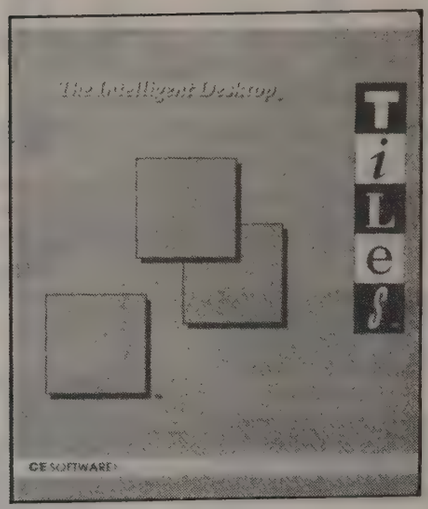
MACINTOSH SOFTWARE REVIEW

POWER WINDOWS

Published By: Kiwi Software
List Price: $79.95

TILES

Published By: CE Software
List Price: $99.95
Reviewed By: Paul Hoffman



In the past few years, few really new software products have appeared. All the spreadsheets, databases, and word processors that will exist already do now, although some companies may copy the features from a current program and make them faster or easier to use. The one area where new programs continue to appear is "utilities," that hard-to-define area that pretty much helps you manage your computer better. Utilities often sell as many copies per year as major applications, although they usually cost significantly less.

Two recent Macintosh utilities try to help a particular type of user: the person who has too many things happening at one time. If you normally run three or more programs at the same time, or you often open many documents for a single program together every day, Tiles and Power Windows may help you. Both programs make it easy to launch multiple programs and open groups of documents with a single action. Tiles doesn't do much more than that, and the only other major feature of Power Windows is the ability to change the arrangement of your windows. If you don't suffer from documentitis or window clutter, neither program will do much for you.

After you install Tiles, it watches what you do and creates small buttons (called *tiles*) on your desktop that correspond to running a program and opening a document. You can change the tiles to include more documents or more than one program. Thus, if you normally run Excel with two specific worksheets open and Word with five particular documents, all at the same time, you could create a tile that opens them all at once.

Power Windows takes a different tactic. It is mostly used to rearrange your windows to better fit your work style. For instance, you could make a screen template that causes the top window to take up the left two-thirds of the screen, with the other windows being shoehorned into the right side. If you have a full-page or two-page monitor, you will find Power Windows more useful.

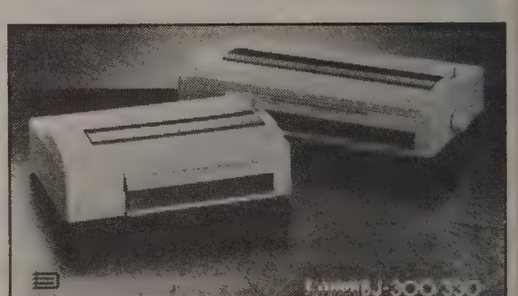
The value of these programs is questionable. Sure, opening or rearranging many windows is a pain, but is the time saved really worth $75 or $100? Given that you will probably change the mix of programs and documents that you open, you may spend as much time reconfiguring the programs as you would in the Open dialog box. (Kiwi Software, Inc., 6546 Pardall Rd., Santa Barbara, CA 93117. 805/685-4031. CE Software, Inc., PO Box 65580, West Des Moines, IA 50265. 515/224-1995)

PRINTER REVIEW

DESKTOP BUBBLE JET PRINTERS

Manufactured By: Canon Inc.
List Price: BJ-300, $799; BJ-330, $949
Reviewed By: Peter John Harrison

Buying a printer used to be a choice of either a cheap but slow and noisy dot-matrix printer or an expensive but quiet and fast laser printer. While laser quality printing has become the defacto standard for business correspondence, dot-matrix printers offered flexibility for handling special papers, like continuous or multi-part forms and labels.



The Canon desktop Bubble Jet printers change this dichotomy. The BJ-300 for standard paper widths and the BJ-330 for wider paper create near laser quality documents as quietly as a laser printer,

Continued

We've Got It All!

- **In Stock** left or right return (left shown)
- Matching file cabinet and 48″ computer desk

Also In Stock

- Matching 30″W and 40″W computer carts

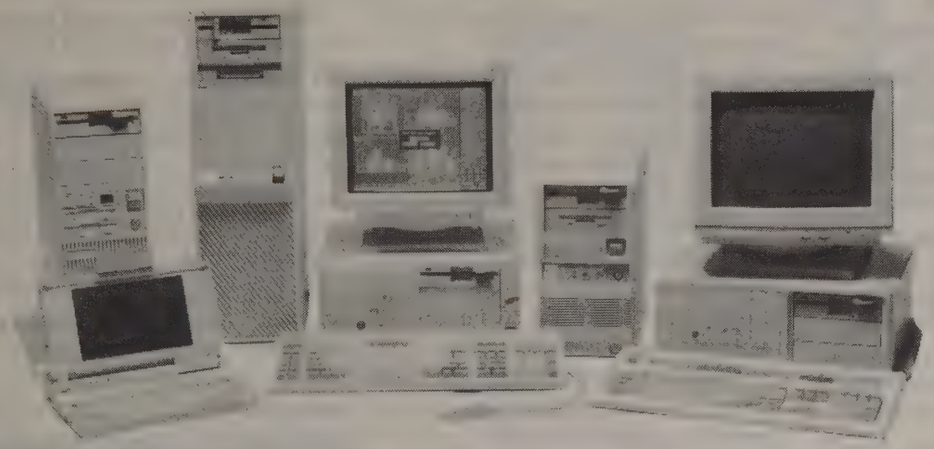
Also In Stock

- (40″ Houses "Tower")

Modulars, Rolltops, Carts!

ALPHA
FINE COMPUTER FURNITURE
(510) 930-0277
2241 N. MAIN, WALNUT CREEK
OPEN: M-F 9:30-5:30 SAT 10-5

All You Need Is a MIRACLE



486-50 MHz
with 256KCache

* 80486-50MHz 256k Cache Motherboard
* 4MB RAM Expandable to 32MB
* Case/Power Supply
* IDE (Hard/Floppy) Control
* TEAC 1.2 MB Floppy Drive
* TEAC 1.44 MB Floppy Drive
* 120MB Hard Disk
* Serial/Parallel/Game Card
* Super VGA 1024x768 Monitor & 1 MB Card
* 101 Keyboard

$ 2299

486-33MHz
with 256K Cache

* 80486-33MHz 256k Cache Motherboard
* 4MB RAM Expandable to32MB
* Case/Power Supply
* IDE (Hard/Floppy) Control
* TEAC 1.2 MB Floppy Drive
* TEAC 1.44 MB Floppy Drive
* 120MB Hard Disk
* Serial/Parallel/Game Card
* Super VGA 1024x768 Monitor & 1 MB Card
* 101 Keyboard

$ 1899

386-33MHz
with 64K Cache

* 80386-33MHz 64k Cache Motherboard
* 4MB RAM Expandable to32MB
* Case/Power Supply
* IDE (Hard/Floppy) Control
* TEAC 1.2 MB Floppy Drive
* TEAC 1.44 MB Floppy Drive
* 105MB Hard Disk
* Serial/Parallel/Game Card
* Super VGA 1024x768 Monitor & 1 MB Card
* 101 Keyboard

$ 1499

386SX-25MHz

* 386SX-25MHz Motherboard
* 1MB RAM Expandable to 8MB
* Case/Power Supply
* IDE (Hard/Floppy) Control
* TEAC 1.2MB or 1.44MB Floppy Drive
* 40MB Hard Disk
* Serial/Parallel/Game Card
* VGA Monitor & Card
* 101 Keyboard

$999

286-12 MHz

* 80286-12 MHz Motherboard
* 1MB RAM Expandable to 4MB
* Case/Power Supply
* IDE (Hard/Floppy) Control
* 1.2MB or 1.44MB Floppy Drive
* 40MB Hard Disk
* 12" Amber Monitor & Card
* 101 Keyboard

$599

20 MHz $619

For VGA 640x480 add $200

®DTK Computer
486-33 MHz

* 80486-33MHz 64k Cache Motherboard
* 4MB RAM Expandable to32MB
* Tower Case/Power Supply
* IDE (Hard/Floppy) Control
* TEAC 1.2 MB Floppy Drive
* TEAC 1.44 MB Floppy Drive
* 120MB Hard Disk
* Serial/Parallel/Game Card
* Super VGA 1024x768 Monitor & 1 MB Card
* 101 Keyboard

$ 2175

Professional CAD Solution

NANAO® T560i 0.26mm 17" $1950
T660i 0.31mm 20" $2495

Fast Graphics Processor

STEALTHRAM DIAMOND STEALTH $ 295.00

ORCHID Fahrenheit 1280 $ 299.00

VIDEO/AUDIO CARDS	
ATI GRAPHICS ULTRA 1MB	$ 595
ORCHID Pro Designer IIs Sierra	$ 235
TRIDENT SVGA 1MB	$ 79
SOUNDBLASTER	$ 119
SOUNDBLASTER PRO	$ 199
MONITORS	
NEC 3FGX	$ 649
NEC 4FG	$ 785
NEC 5FG	$ 1425
SONY 1304 Non-interlaced	$ 575
SONY 1604 Non-interlaced	$ 1099
VIEWSONIC 4E	$ 305
VIEWSONIC 5E Non-interlaced	$ 425
VIEWSONIC 7 17"	$ 1149
VIEWSONIC 8 20"	$ 1599
PRINTERS	
CANON BJ-10ex	$ 319
CITIZEN PN48 PORTABLE	$ 335
CITIZEN GSX-130	$ 239
CITIZEN GSX-140 PLUS	$ 299
CITIZEN GSX-145	$ 385
OKIDATA 380	$ 239
OKIDATA 320	$ 329
OKIDATA LASER OL400	$ 619
PANASONIC KX-P2180	$ 179
PANASONIC KX-P2123	$ 249
PANASONIC KX-1124i	$ 279
PANASONIC KX-P1624	$ 355
PANASONIC LASER KX-P4410	$ 675
PANASONIC LASER KX-P4450i	$ 1099
PANASONIC LASER KX-P4455	$ 1779
LASER RAM CARDS	
HPIIP, III, IIID, & IIIP	$ 49
OKIDATA OL400	$ 59
PANASONIC 4420, 4450i	$ 59
PANASONIC 4455	$ 89
SCANNERS	
LOGITECH SCANMAN 256GS/OCR	$ 305
LOGITECH SCANMAN 32GS/OCR	$ 189
DIGITAL CAMERA	
LOGITECH FOTOMAN	$ 595

HARD DISKS	
CONNER CP-3204 212MB IDE 16ms	$ 650
CONNER CP-30104 120MB IDE 19ms	$ 335
MAXTOR LXT340A 120 MB IDE 15ms	$ 999
MAXTOR 7120A 120 MB IDE 15ms	$ 375
QUANTUM 120AT 120MB 15ms	$ 375
TAPE DRIVES	
COLORADO DJ-10 120MB	$ 209
COLORADO DJ-20 250MB	$ 285
FAX/MODEMS	
MODEM 2400B (INTERNAL)	$ 49
U.S. ROBOTICS Sportster 9600 int	$ 379
U.S. ROBOTICS Sporster 9600 ext.	$ 429
ZOLTRIX FAX/MODEM 9624	$ 79

ARTISOFT NETWORKING	
LANtastic AE-2 Ethernet Starter Kit	$ 495
LANtastic AE-2 Ethernet Adapter	$ 235
LANtastic 2 Mbps Starter Kit	$ 365
LANtastic 2 Mbps Starter	$ 149
MICE	
LOGITECH MOUSEMAN SERIAL	$ 62
LOGITECH TRACKMAN Portable	$ 99
MICROSOFT MOUSE	$ 84
KEYBOARDS	
FOCUS FK-5001 130 Keys	$ 65
FOCUS FK-2000 Plus w/cover	$ 47
KEYTRONIC 101	$ 45
OMNIKEY ULTRA	$ 99
OMNIKEY 102	$ 75

Inquiries and Tech. Support Call:
(408) 435-8177 or (714) 632-1155
Office Hours: Mon - Sat 9:00 to 5:30

Terms:
* One year warranty on parts and labor
* 30 day money back guarantee w/a 15% restocking fee
* Damaged shipments are the shipper's responsibility
* All merchandise returned must be in original packaging along with RMA number
* All prices and specifications are subject to change w/o notice

VISA MasterCard

SOUTHERN CALIFORNIA OFFICE:
2940 E. LA PALMA AVE., SUITE E
ANAHEIM, CA 92806
TEL: (714) 632-1155 FAX: (714) 632-1596
FOR ORDERS CALL:
1-800-446-9929

MIRACLE COMPUTERS

NORTHERN CALIFORNIA OFFICE:
780 MONTAGUE EXPWY., #202
SAN JOSE, CA 95131
TEL: (408) 435-8177 FAX: (408) 435-8179
FOR ORDERS CALL:
1-800-969-8177

Authorized PANASONIC, CITIZEN, STAR, OKIDATA Sales & Service Center

and can print on fanfold paper, single-part forms, and labels. Multipart forms still require a dot-matrix printer. Spraying ink onto the paper keeps the BJ printers quiet, but eliminates the impact required to transfer the image onto subsequent carbon copies.

Canon's Bubble Jets have some other minor disadvantages, too. The ink, for example, can be smeared if you're in a rush—pulling your document off the printer and crushing your thumb into the almost-dry ink. Bubble Jet print speeds, while one-and-a-half to two times faster than comparably priced dot-matrix printers, are still slower than a personal laser printer costing a couple hundred more. But, these are really only minor disadvantages and laser printers are not as versatile.

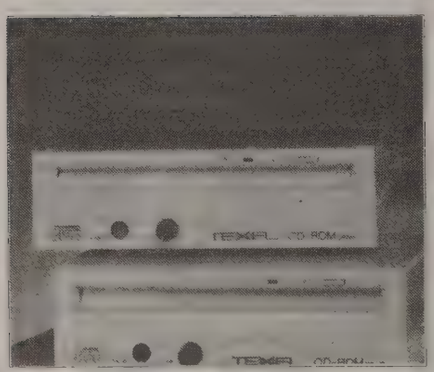
I like Canon's new Bubble Jets. They're a good choice for a home office as well as a medium-duty office printer where price, print quality, flexibility, and noise are important considerations. (Canon USA, Inc., 15955 Alton Pkwy., Irvine, CA 92718. 714/753-4000)

PC HARDWARE

TEXEL CD-ROM DRIVE

Manufactured By: Texel American
List Price: $448
Reviewed By: Woody Liswood

Now that multimedia has arrived, and the wide variety of CD-ROM-based applications is coming of age, it is only a matter of time before you are going to need to add a CD-ROM drive to your system. Texel makes a variety of internal and external CD-ROM drives that should work with any CD-ROM-based application you might have.



The Texel internal 3021 is a SCSI-based drive that comes with a Trantor SCSI host adapter card. The Texel drive has audio capability, a volume control button along the face plate of the drive, and a miniplug for earphones.

On the back of the drive is a 50-pin SCSI plug, power connector, and a special 3-pin audio connector for plugging your stereo equipment into the 3021.

This drive worked perfectly using all of the default installation options. I also used it with a Pro AudioSpectrum sound board, which also uses a SCSI connection. Again, it worked perfectly from that configuration.

I used the Texel on a 286, a 386, and a 486-based machine. No problems with any of those either.

And, just to make certain that everything would run, I ran the Texel with Multimedia Windows as well as a variety of DOS-based CD-ROM applications. Again no problems.

The Texel works with CD-ROM Mode 1 and 2 discs as well as with CD-Audio disks. It has a transfer rate of 150K/second up to a maximum of 1.5MB/second when measured through the 64K buffer. The 3021 has an access time of 340 milliseconds.

The software accompanying the Texel 3021 lets you easily set everything up. The installation program modifies both the config.sys and autoexec.bat file to get the drive running. There is a SCSI test program to help you verify that everything is connected correctly, a special CHKCD program that displays information about the CD-ROM, a LOCKCD.EXE program that locks the ROM drive to prevent anyone from accidentally ejecting a CD-ROM, and, as you might expect, a program to UNLOCK the CD as well as eject it from the drive.

Installation of the hardware is rather easy. Open up the computer. Put the Texel 3021 in a vacant half-height drive bay, connect the power cord, insert the SCSI adaptor cable, hook up the cables, turn on the computer, run install. That's it. Not much to it, and everything works. And, since the Texel 3021 runs Windows Multimedia with no problems, this may be the CD-ROM drive you want to connect to and work with the sound board your already installed. (Texel American, Inc., 1080C E. Duane Ave., Sunnyvale, CA 94086. 408/736-1374)

PC SOFTWARE REVIEW

IT'S LEGAL

Published By: Parsons Technology
List Price: $69
Reviewed By: Peter John Harrison

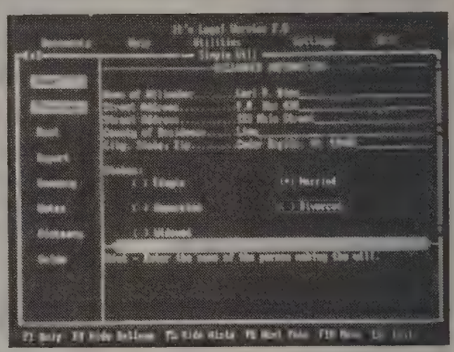
When you have a cold or headache, you probably use over-the-counter pain relievers and cold remedies instead of calling a doctor. Why then go to an attorney to have a fairly generic document drawn up, like a Will or Bill of Sale?

It's Legal, from Parsons Technology, is like the First Aid aisle at the supermarket. If you know what document you need, and it's available in this collection, you can create it yourself and save the expense of visiting a lawyer.

I wanted to create a Living Will, a document explaining my desires about when to "pull the plug" if I ever become terminally ill and am unable to communicate my wishes. It's Legal made drawing up a Living Will easy.

Aside from grim documents like Wills and Living Wills, It's Legal also has forms to help you deal with more mundane everyday issues. There's a formal job acceptance letter, a contract work agreement, and letters to query or challenge information in credit reports, to demand payment of money owed you, and to complain about goods or services you have purchased.

Filling out a legal form with It's Legal is as easy as selecting the document you want to create from a menu, then working through a question-and-answer session. Once you're done, you can either print the document directly or import it into a word processor to add some finishing touches.



It's Legal's documentation does a good job of explaining how to install and use the software, and an excellent job of explaining each legal form, what it's for, who can and can't use it, and when you need to forget the software and contact an attorney. There is also a glossary of legal terms that explains much of the legal terminology in each document.

Bottom line, It's Legal software will help you put together important legal documents without the expense of hiring an attorney. Like aspirin and cough syrup, you may sometimes need more than It's Legal can provide, but if the problem fits the cure, this is Over-The-Counter-Law you can afford. (Parsons Technology, Inc., 1 Parsons Dr., PO Box 0100, Hiawatha, IA 52233-0100. 1-800-223-6925)

NETWORK HARDWARE

TOKENEXPRESS

Manufactured By: Intel
List Price: $695 (MAC 16/4 or ISA 16/4), $895 (EISA 16/4)
Reviewed By: Peter John Harrison

Everybody, at some point, takes their work home with them and dreams about it. LAN administrators are no exception. Some dreams are OK, like those about being able to help someone get their job done. Others are about network interface cards.

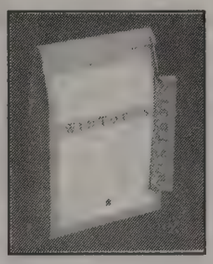
Intel has found a way to make my nights

Continued

WINTOOLS

TOOL TECHNOLOGY PUBLISHING

ONLY $129



Administrative Assistant
Customize work by adding more desktop space & create meaningful icons

Power User
Automatic work by tracking and running applications

Network Administrator
Control Security

" If you like the drag and drop environment of Windows and Norton Desktop for Windows, chances are you'll LOVE WinTools. This replacement for Windows' Program, File and Task Managers is a REVOLUTIONARY revamping of the way Windows works and looks." PC MAGAZINE. 3/92

MICROSOFT. WINDOWS. 3.1

IN STORE SPECIAL!

UPGRADE
$39*
*WITH PURCHASE CHECK STORE FOR DETAILS

WINDOWS 3.1
$89
MOUSE WITH WINDOWS
$149

New!

Way Forward Fun Pack

For Microsoft Windows

Introducing the WayForward Fun Pack™
Seven exciting arcade style games for Microsoft® Windows™

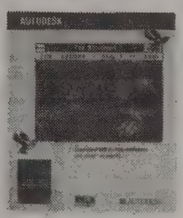
Including:
- Chomp, a Pac Man® variation for windows
- Warhead, blast incoming missiles before they destroy your cities
- Emlith, a Tetris™ style game with an extra challenge
- Hyperoid, the next generation of Asteroids™
- Blitzer, rescue the world's leading scientists from alien invaders

WayForward Technologies is so confident you will love this product, they are offering a lifetime money back guarantee.

WAY FORWARD TECHNOLOGIES

ONLY $25

AUTODESK



NEW! MULTIMEDIA EXPLORER INCLUDES:
- Animator
- Animation Player for Windows
- Animator Clips CD-ROM

$149

TRUEVISION

TARGA+

TRUEVISION ATVISTA 1 MB	2499.00
TRUEVISION ATVISTA 2 MB	2999.00
TRUEVISION ATVISTA 4 MB	3799.00
TRUEVISION TARGA+16	1499.00
TRUEVISION TARGA+16 MCA	1499.00
TRUEVISION TARGA+16/32	1699.00

VIDEOVGA

TRUEVISION TARGA+16/32 MCA	1699.00
TRUEVISION TARGA+64	1999.00
TRUEVISION TIPS TARGA+	599.00
TRUEVISION VGA-1 MB	995.00
TRUEVISION VGA-512	699.00

TOSHIBA

PC MAGAZINE EDITORS' CHOICE

TOSHIBA T2200SX
- 20 MHZ, i386SX processor
- 80 MB hard drive
- 1.44 MB diskette drive
- 2 MB RAM expandable to 10 MB
- Bright VGA display

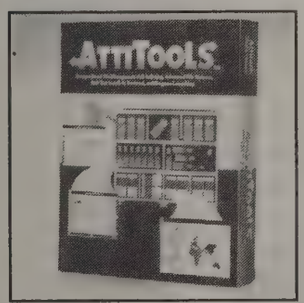
NEW LOWER PRICE
$2799

THE TOSHIBA T4400SX
- 25 MHZ Intel 486 SX CPU
- 8KB cache in CPU
- Choice of VGA compatible displays
  –16 gray scale plasma display
  –64 gray scale LCD
- 2 MB RAM expandable to 10 MB
- 85 MB hard disk drive

ONLY $4399

AttiTools™

Free-Up and Organize Space in Windows 3.0 & 3.1

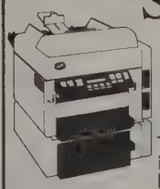


ONLY $79

Attitash Software

AttiTools is a collection of four Window-based utilities designed to work together for Content-based Information Management. AttiTools lets users quickly manage files, launch applications, analyze their hard disks, and find information in files, even if the files are spread across local hard disks, floppy disks, or even multiple hard disk drives on a network.

Start fast. Then speed up.



MODEL 6 $1399
MODEL 10 $1749

The IBM® LaserPrinter 6 and the LaserPrinter 10 have a lot in common. They're both faster than their counterparts, the HP LaserJet III P and HP LaserJet III Printers. But the big story is that the 6 can be upgraded to a 10. Presto chango. So if your business has a growth spurt, so can your LaserPrinter.

LEXMARK Authorized Dealer

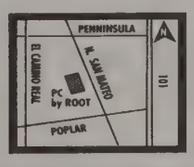
PC By ROOT

For Orders Only:

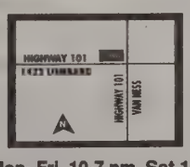
1-800-347-0343

* NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS

MasterCard VISA



Hours: Mon - Sat 9-6 pm
851 North San Mateo Drive
San Mateo, CA 94401
(415) 343-0343
Fax (415) 343-1516



Hours: Mon- Fri 10-7 pm Sat 11-5 pm
1422 Lombard at Van Ness
San Francisco, CA 94123
(415) 923-0343
Fax (415) 343-1516

PRODUCT SPOTLIGHT

easier. The Intel TokenExpress card for Token Ring networks is the first network interface card I've found that delivers on the promise of easy installation. The documentation is brief, clear, and easy to follow. Intel also has excellent support available over the phone, through an online BBS, and through an innovative Fax Back service. Intel's Fax Back does just what the name says. They will fax you specific documents, allowing you to get quick and up-to-date answers to your support questions, twenty-four hours a day.

The TokenExpress card itself is as good as Intel's documentation and support. Unlike most network interface cards, which require you to remove the card and set the boards options using jumper pins, this card has a series of DIP switches located on the top edge of the card, where you can get to them without having to pull the card out.

Recently, I had the opportunity to add seven diskless workstations to my firm's LAN—five using the TokenExpress cards and two with Proteon's p1390 card. I am pleased to say that getting the five TokenExpress workstations up and running took about half a day. I'm still fighting to get even one of the Proteon workstations online.

I guess you could say that the TokenExpress card is just Intel's way of saying "Sweet Dreams." (Intel Corp., 3065 Bowers Ave., PO Box 58065, Santa Clara, CA 95052-8121. 408/765-8080)

BOOK REVIEW

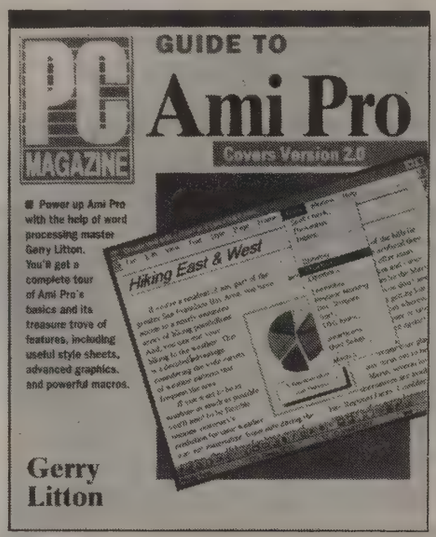
PC MAGAZINE GUIDE TO AMIPRO

Written By: Gerry Litton
Published By: Ziff-Davis Press
List Price: $24.95
Reviewed By: Woody Liswood

If you use AmiPro, the top-rated Windows word processor from Lotus, and want to read in-depth discussions about every aspect of this extremely capable program, this book will be a welcome addition to your library. Over seven hundred pages of information cover practically everything about AmiPro.

The *Guide* starts with the basics—beginning with what type of equipment you will need, through the entering and editing of text from the keyboard, and what to do with your mouse—and goes far into the depths of the program.

I've worked with AmiPro, since it was simply AMI in pre-Windows 3.0 days and could not find anything missing from this book. In terms of completeness, the author has obviously done his homework. In fact, this book is so complete that it can take the place of the documentation you get with the real thing.


PC MAGAZINE
GUIDE TO
Ami Pro
Covers Version 2.0
Power up Ami Pro with the help of word processing master Gerry Litton. You'll get a complete tour of Ami Pro's basics and its treasure trove of features, including useful style sheets, advanced graphics, and powerful macros.
Hiking East & West
Gerry Litton

Obviously designed for that marketplace where you may need to know about a program when you don't have the documentation easily accessible.

A great book for AmiPro users. It now has a permanent place on my bookshelf, right next to my copy of AmiPro itself. (Ziff-Davis Press, Inc., 5903 Christie Ave., Emeryville, CA 94608. 510/601-2000)

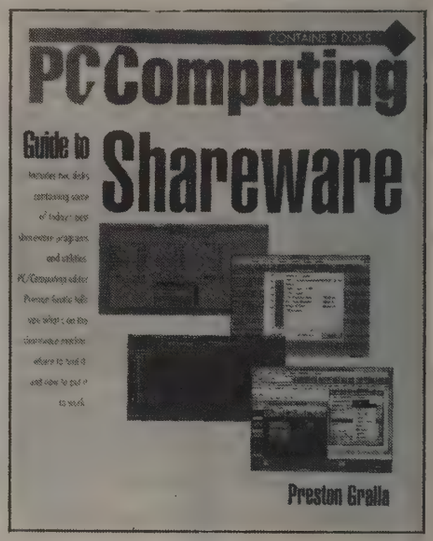
PC COMPUTING GUIDE TO SHAREWARE

Written By: Preston Gralla
Published By: Ziff-Davis Press
List Price: $34.95
Reviewed By: Woody Liswood

"Shareware," according author Preston Gralla, "is the ultimate in 'try-it-before-you-buy-it' purchasing. You test drive a shareware program first. If you decide to keep using it, you pay for it by sending the author a registration fee, generally a small fraction of what you would pay for commercial software."

Over the years, I, personally, have tested and used shareware programs and can attest that many of them are equal to, if not better than, their commercial counterparts. However, one of the "problems" with shareware is that there is so much of it that it can be difficult separating the wheat from the chaff when looking for that particular program to solve your unique problem.

This *Guide to Shareware*, in slightly over four hundred pages, presents a variety of facts about many of the shareware programs currently found on the major bulletin board systems. Included with this book are also two disks, which contain six programs for your immediate testing. Of the six, PKZIP is there to help you unzip, or expand, the compressed formatted files you will find on most shareware that you download or purchase from other shareware sources. There is also a nice little program, called ViruScan, to help



you check for currently known viruses before your computer is infected. Anyone who downloads software should always check the new disks for virus infections before allowing them permanent residence on your hard disk.

The *Guide* covers Word Processors, Text Editors, Outliners, Style Checkers, Dictionaries, Add-ins for Commercial Word Processors, Communication Programs, programs that automate working with online services, Compression programs, Spreadsheets, Databases, dBASE utilities, Accounting and Checking, Personal Finance, DOS Shells, Menus, General Utilities, Hard Disk utilities, Backup programs, Anti-Virus programs, Printer programs, Envelope, Label and Letterhead printing programs, Education and Entertainment programs, Memory Utilities, PIMs, and a variety of Windows programs, including games and utilities.

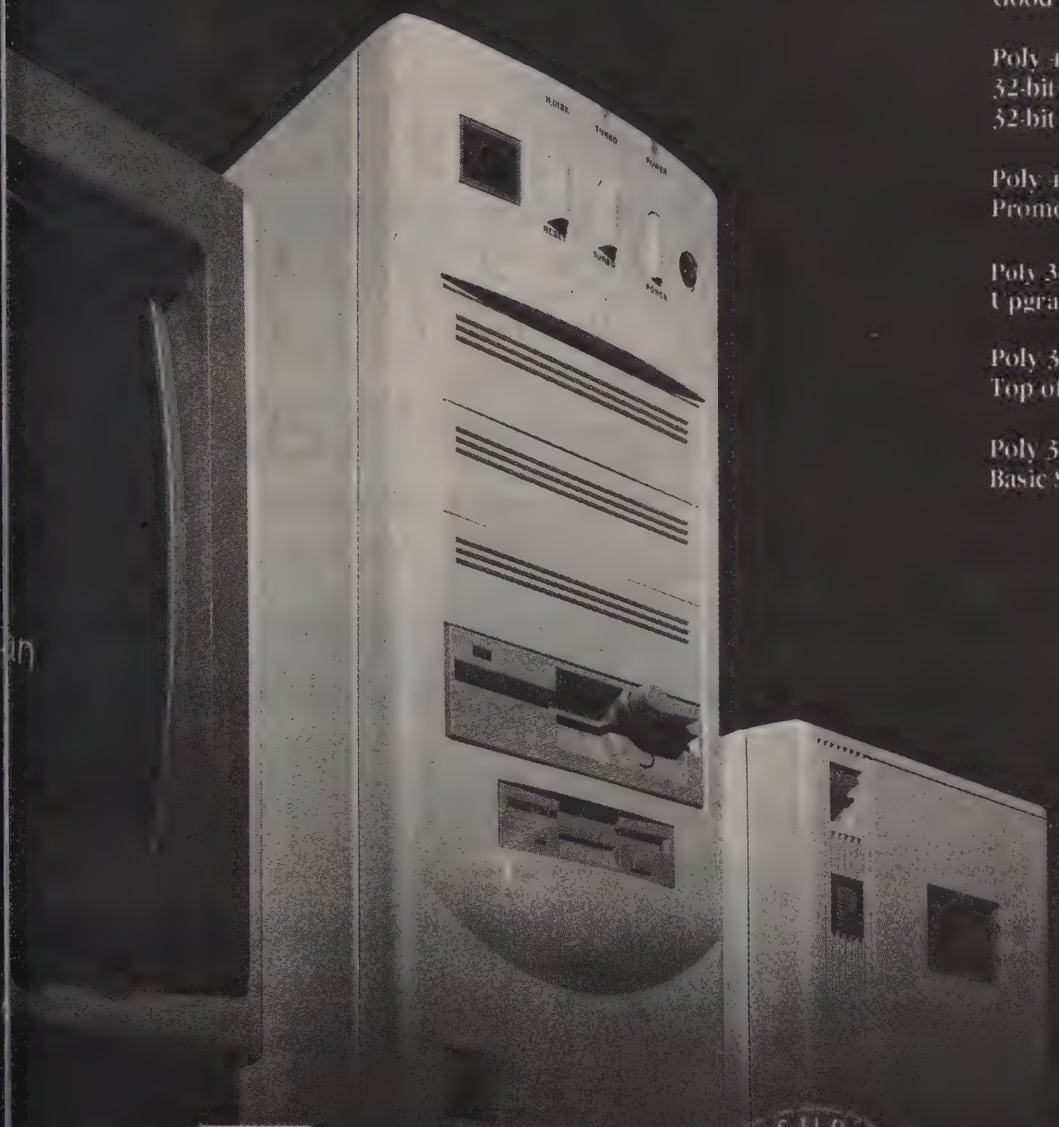
Each of the programs has at least a one-paragraph description about the program, and how it works. The *Guide* also picks a Top Ten of shareware in each of the main categories. For example, its pick for top word processor is PC Write, top communications program is QModem, and top database is PC File.

This book is a must if you wish to explore the shareware marketplace. It has more information in a smaller space than you will find logging on and trying to stumble your way through the typical BBS, or looking in the many shareware catalogs which are circulating. (Ziff-Davis Press, 5903 Christie Ave., Emeryville, CA 94608. 510/601-2000) ■

EISA vs LOCAL bus

WARRANTY POLICY:

- 5-YEAR IN-HOUSE LABOR
- 2-YEAR ON AMERICAN MADE M/B
- 1-YEAR ON STANDARD PARTS
- 1-YEAR ON-SITE SERVICE OPTION
- 10-YEAR FREE PHONE SUPPORT



Poly 486-50E 32-bit EISA Bus HD Controller 32-bit EISA Bus Super VGA Card	$3,980
Poly 486-50L 32-bit Local Bus Video I/O 20 times faster than regular 486	$3,255
Poly 486-50V Good Price/Performance Ratio	$2,595
Poly 486-33 EISA 32-bit EISA Bus HD Controller 32-bit EISA Bus Super VGA Card	$2,800
Poly 486-33I Promotional Price	$1,695
Poly 3486/Zen Upgradeable to 486DX at 33/50/66	$1,350
Poly 386-40DX Top of the Line for 386's	$1,230
Poly 386-25DX Basic System for Entry Level	$999

Custom Configurations Available.

To order or for more information call :

1 (800) 999-1CPU

In California

(415)583-7222

Fax : (415) 583-1974

intel inside

PC MAGAZINE EDITORS' CHOICE JULY 1990

INFO WORLD TOP 100 1989

BUYER'S ASSURANCE SEAL INFO WORLD 386-33

MICROSOFT WINDOWS™ COMPATIBLE

Novell Labs Tested & Approved

ORCHID

MYLEX

POLY SYSTEMS

Polywell Computers, Inc.
61 "C" Airport Boulevard
South San Francisco
CA 94080 U.S.A.

We Have Been Serving The Bay Area For Over 6 Years

WHY BUY FROM ANYONE ELSE . . . WHEN YOU CAN BUY FROM THE BEST—
UNIVERSAL COMPUTER PRODUCTS

Special 10 MHz Turbo 8088 $295

486-33 MHz
W/256K CACHE

- 4 MB RAM installed
- Intel 486-33 MHz CPU & Math Co-processor
- 1.2 and 1.44 MB Floppy Drive
- 1:1 Interleave 2 HD/FD Controller
- AT Multi I/O (2S/1P/1G)
- Clock/Calendar with battery back-up
- Enhanced 101 Keyboard
- 120 MB IDE Hard Drive

Monitor Optional

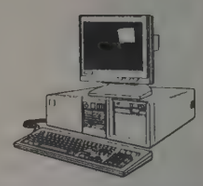
$1480

486-25 MHz
W/64K CACHE

- 4 MB RAM installed
- Intel 486-25 MHz CPU & Math Co-processor
- 1.2 and 1.44 MB Floppy Drive
- 1:1 Interleave 2 HD/FD Controller
- AT Multi I/O (2S/1P/1G)
- Clock/Calendar with battery back-up
- Enhanced 101 Keyboard
- 120 MB IDE Hard Drive

Monitor Optional

$1350



386-33MHz
W/64 CACHE

- 0 Wait State on Motherboard
- Main Memory 1 MB
- Expandable to 2 MB/4 MB/8 MB
- Support Coprocessor Intel or Weitek
- AMI BIOS set up
- 2/Serial 1/Parallel 1/Game Port
- 101 Extended Keyboard
- 1.2 MB TEAC Floppy Drive
- HD Controller with 28MS 80 MB Hard Drive

$820

Monitor Options

Mono Monitor with Card $95
VGA Monitor with 16 bit Card $300
Super VGA (1024x768) VGA Monitor with 16 bit Card $390

386-25MHz
(0 WAIT STATE)

- Main Memory 1 MB
- Expandable to 2 MB/4 MB/8 MB
- Support Coprocessor Intel or Weitek
- 2/Serial 1/Parallel 1/Game Port
- 101 Extended Keyboard
- 1.2 MB TEAC Floppy Drive
- 1:1 Interleave Controller with 28MS 40 MB Hard Drive

$720

Monitor Options

Mono Monitor with Card $95
VGA Monitor with 16 bit Card $300
Super VGA (1024x768) VGA Monitor with 16 bit Card $390

386-16SX
(0 WAIT STATE)

- Main Memory 2 MB (EMS On Board)
- 8 Slots and Socket for Intel 80387 SX
- 200 W Approved Power Supply
- Real Time Clock with Battery Backup
- 2/Serial 1/Parallel 1/Game Port
- 101 Extended Keyboard
- 1.2 MB & 1.44 MB TEAC Floppy Drive
- 1:1 Interleave Hard Drive Controller with 80 MB Hard Drive

$699

Monitor Options

Mono Monitor with Card $95
VGA Monitor with 16 bit Card $300
Super VGA (1024x768) VGA Monitor with 16 bit Card $390

286-12/16MHz
(0 WAIT STATE)

- Main Memory 1 MB (EMS On Board)
- 8 Slots and Socket for Intel 80387
- Foot Print LED AT Case
- Real Time Clock with Battery Backup
- 2/Serial 1/Parallel 1/Game Port
- 101 Extended Keyboard
- 1.2 MB TEAC Floppy Drive
- 1:1 Interleave Hard Drive Controller with 40 MB Hard Drive

$520

Monitor Options

Mono Monitor with Card $95
VGA Monitor with 16 bit Card $300
Super VGA (1024x768) VGA Monitor with 16 bit Card $390

1 Year Parts/1 Year Labor Warranty On All Systems

We Do Repairs, Upgrades on IBM's & Compatibles

INTEL MATH CO-PROCESSORS

80287-10 For 286 System	$90
387 SX-16	135
387 DX-20	200
387 DX-25	210
387 DX-33	210

ADD ON BOARD

AT I/O Card 2S/1P/1G	$25
Mono Graphic/Printer	25
Color Graphic/Printer	35
XT High Density Floppy Cont	35
XT Hard Disk Cont	55
EGA 600x800 Card	79
MFM 1:1 HD/FD Cont	69
IDE Dual HD/FD Cont	35
SCSI 1:1 HD/FD Cont	125
RLL 1:1 HD/FD Cont	80
Orchid Pro Designer w/1 MB	189
1024x768 Fastest VGA Card	

TAPE BACKUP

COLORADO 120 MB/250 MB	$209/279
EVEREX 80 MB/120 MB	229/269

PRINTERS

CITIZEN 200GX (9 pin)	$169
CITIZEN GSX 140 PLUS (24 pin)	299
CITIZEN GSX145 (132 column)	399
PANASONIC 1180I (9 pin)	169
PANASONIC 1123 (24 pin)	209
PANASONIC 1124I (24 pin)	289
PANASONIC 1624 (132 column)	349
PANASONIC 4410 LASER	695
PANASONIC 4450 LASER	1195
TONER KX-P450	37
CITIZEN GSX-130 (24 pin)	249
CITIZEN Color Upgrade Kit	49

TRACKMAN

Logitech Serial Mouseman	$65
Logitech Bus Mouseman	65
Logitech Kidz Mouse	49
Logitech Cordless Mouseman	99
Mouse Systems Page Scanner	199
Trackball	59
Summasketch II	320

HARD & FLOPPY DRIVES

ST-251-1 40Mb HD (MFM)	$259
ST-351A 40Mb IDE HD (MFM)	210
ST-3120A 100Mb IDE	330
ST-3144A 120Mb IDE	375
ST-1239A 211Mb IDE	620
CP-30104 120Mb IDE HD	370
Maxtor 7080A 80Mb IDE	305
Maxtor 7120A 120Mb IDE	375
Teac 1.2/1.44Mb Fly	60
Teac 360/720K Fly	60

MONITORS

NEC 2A 14" 800x600 .31	$379
NEC 3D 14" Multisync, 1024x768	579
Sony 1304 SVGA 1024x768	579
Supertron 14" Monochrome	105
Seiko 1440 SVGA 1024x768	475
Seiko 1450 Non-Int	595
Abonite SVGA 1024x768 .28	285
Abonite SVGA 1024x768 .39	250
Abonite 14" MVGA Flat Screen	125
Abonite 9" MVGA	115

UNIVERSAL COMPUTER PRODUCTS

951 El Camino Real, South San Francisco, CA 94080

(415) 583-9736 Fax (415) 583-3457

Mon.-Fri.: 9am-6pm Sat: 10am-5pm Prices Reflect 3% Cash Discount. Not responsible for misprints.

VISA MasterCard DISCOVER

(Inside Fairway Plaza)

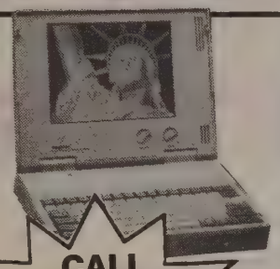
Songtech International, Inc.

TEL: 510-770-9051
FAX: 510-770-9060

POWERFUL PORTABLES!

386-SX NEW NOTEBOOK COMPUTER

- 386SX-20 CPU
- 2 MB Memory Exp to 4 MB
- 40 MB Hard Disk (60/80 MB Available)
- 3.5″ 1.44 MB FDD
- Serial/Parallel/VGA Port
- VGA Backlit Screen 640x480
- AC/DC Adapater & Fast Charger Option
- Runs on Ni-Cad AA Size Batteries
- 80 Key Keyboard
- Only 11.5″ (L) x 8.5″ (W) x 2″ (H)
- Only 5.7 LBS

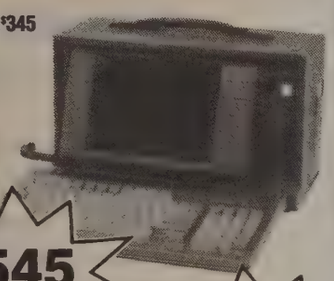


CALL FOR BEST PRICE!

CRT PORTABLE w/9″ MONITOR (720x350 TTL) $345

KINGTECH LCD PORTABLE

- 640 x 480 Supertwist LCD Screen w/Built-in Backlight
- Run VGA/EGA/CGA/MGA Mode
- 200 Watt 110/220 Auto Switch P/S
- Detachable 89-Key Keyboard
- Two 5.25″ FDD, One 3.5″ HDD
- Six Expansion Slots
- Weight: 16 lbs.
- Dimensions: 16″ (W) x 9″ (H) x 7 ″ (D)

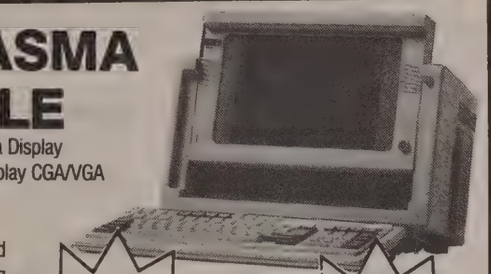


$545 CGA

$795 VGA

GAS PLASMA PORTABLE

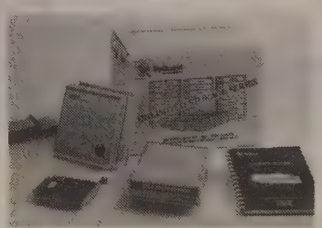
- High Resolution Gas Plasma Display
- 640x400 Pixel Graphics Display CGA/VGA
- 80 Characters x 25 lines
- 9.25″ x 6″
- Detachable 84-Key Keyboard
- 110/220 VAC Auto Switching
- RS-232 Serial Port
- Parallel Printer Port
- External Monitor Port
- Soft carrying bag



$1155 VGA

$1295 VGA+

SYQUEST 44MB REMOVABLE HARD DRIVE INCLUDES:

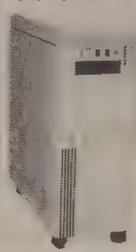


44 MB HARD DRIVE,
2 cartridges, 1 SCSI ADAPTER
External Available

$495

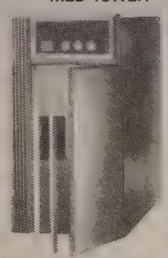
NEW GENERATION OF CASES

BIG TOWER



SE-AT-29

MED TOWER



SA-AT-23

COMPLETE SYSTEMS & PERIPHERALS

486-33 MHz w/64K Cache $895	486-25 MHz w/128K Cache $780
386-40 MHz w/64K Cache $520	386-33 MHz w/64K Cache $495
486-50 MHz w/64K Cache $1195	386-25 MHz $430
386-25 SX w/32K Cache $375	386-16 SX $345
286-16 MHz $295	286-12 MHz $280

SYSTEM CONFIGURATIONS:

- QUALITY MOTHERBOARD
- 1 MB MEMORY
- 1.2 OR 1.44 MB FLOPPY DRIVES
- 1:1 FDD/HDD CONTROLLER
- MULTI I/O (2S/1P/1G)
- AT CASE w/200 WATT P.S.
- ENHANCED 101 KEYBOARD

KEYBOARDS

Enhanced 101 Click (baby)	$32
MTEK 104 (click)	40
Maxi-Switch 101	40
Omnikey Ultra 130	105
Omnikey 101/102	75

COMPUTER CHASSIS

Fliptop Case w/200W PS	$75
Slide-In Case w/200W PS	79
Mini-Tower w/200W PS	59
Med-Tower w/200W PS	95
Big-Tower w/300W PS	445

POWER SUPPLY

230W XT/AT	$45
285W AT	55
300W AT	65

EPROM PROGRAMMERS

EPROM Programmer, EW-901B (1 Port)	$95
EPROM Programmer, EW-904B (4 Ports)	125
EPROM Programmer, EW-701 (1 Port)	125
EPROM Programmer, EW-704 (4 Ports)	160
EPROM Programmer, EW-708 (8 Ports)	235
EPROM Eraser (with Timer, 15 Chips)	90
Universal Programmer & Tester Expro-60	525

HARD DISK SPECIALS

HH1050 44 MB MFM	$169
Conner 120 MB 19ms IDE	CALL
Conner 200MB 19ms IDE	CALL
Quantum 52 MB IDE	CALL
Quantum 120 MB IDE	CALL
Seagate ST 1239, 210 MB, 15ms IDE	CALL
Seagate ST1144A IDE	CALL
Conner 60 MB	CALL
Quantum 240 MB	CALL
Maxtor 120 MB 16ms IDE	CALL

CONTROLLER CARDS

MFM 1:1 Controller	$45
IDE I/O	30
AT I/O (2S/1P)	15

MONITORS & DISPLAY CARDS

12″/14″ Mono	$79/95
Super VGA 0.28 1024x768	265
Oak VGA Card 16 Bit, 256K	45
Trident Super VGA 16 Bit, 1 MB	95
Nanao 16″ 9070U	945
Sony 1304HG 14″	585
Impression 14″ Super VGA	285
Impression 14″ Non-Interlace	350
LAN Network Interface Cards:	
Ethernet 8/16 Bit	$139/165
Arcnet 8/16 Bit	89/139

OTHER MODELS AVAILABLE
CALL FOR BEST PRICES
DEALER INQUIRIES WELCOME

44061 So. Grimmer Blvd., Fremont, CA 94538

PC XT AT are registered trademarks of International Business Machines, Inc.
Prices subject to change w/o notice. Not responsible for typographic errors.

COMP

"As You Li

The Best Prices Anywhere!

Price Guarantee: We will beat every advertised price and almost every non-advertised price. Phone us with your best quote and see if we beat it!

Basic System Configuration

Motherboard and CPU, 1MB memory installed, 1:1 2HD/2FD controller, 1.2MB or 1.44MB Floppy Drive, Internal clock/calendar, Mathematical coprocessor socket, 2 Serial/1 Parallel ports, Enhanced case with Power Supply and 101-key Enhanced Keyboard.

•••

486-33C EISA w/64k cache	$1199
486-33C ISA w/64k cache	$759
38640C w/64k cache	$599
386-33C w/64k cache	$569
386-25	$469
386-20SX	$399
386-16SX	$379
286-16	$299

•••

Peripherals and Accessories

40MB/28ms (IDE)	$163
89MB/18ms (IDE)	$269
124MB/19ms (IDE)	$359
150MB/18ms (ESDI)	$648
200MB/18ms (IDE)	$559
Call for other hard drives	
14" SVGA (1024x768, 0.28) Monitor & Card	$348
14" VGA Color Monitor & Card	$268
12"/14" Mono Monitor w/ MPG Card	$88/108
NEC 4D/NEC 3D/ NEC 2A	$998/598/398
Sony 1304 HG (1024x768, 0.25)	$589
Nanao 9080 i (16" SuperMultiscan)	$1049
Trident 1MB (1024x768)	$74
Tseng Lab (1024x768)	$109
Orchid Prodesigner IIs w/1MB	$149
Orchid Prodesigner Sierra w/1MB.	$179
Citizen 200GX (9-pin)	$154
Additional RAM (per MB)	$48
Panasonic KX-P1180 (9-pin)	$149
Panasonic KX-P1123 (24-pin)	$228
Panasonic KX-P1124 (24-pin)	$229
Panasonic KX-P1624 (24-pin)	$368
Windows 3.0 + Mouse	$59
Internal Modem 2400 Baud	$49
Fax Modem (9600 Fax, 2400 Modem)	$95
Logitech Mouseman serial (400dpi)	$66
Diamond Speed Star w/1MB	$178
Motherboard with CPU	CALL
Hi-Resolution Mouse	$19
MS DOS 5.0	$49
Microsoft Windows	$45

Call For Custom Configurations

Stargate

386/33 64k Cache or 386/40 64K Cache

- 4MB RAM (Add $160 for 8MB RAM)
- 1.2MB 5.25" Floppy Drive
- 1.44MB 3.5" Floppy Drive
- Dual Hard/Floppy IDE Controller
- 120MB Conner, Maxtor or Quantum Hard Drive (Add $200 for 200MB)
- 1 Parallel, 2 Serial, Game Ports
- High Quality 101 Enhanced Keyboard
- 1024x768 .28 DOT Pitch 14" Color Monitor (Add $65 for non-interlaced)
- 1MB Trident SVGA Card
- Choice of Mini-Tower, Medium-Tower, Full-Tower, or Desktop

386/33 ...$1469
386/40 ...$1499

Video Upgrade Options

Graphic Card Upgrades

Orchid Pro Designer IIs w/1MB	add $75
Orchid Pro Designer IIs w/1MB and Orchid Sierra High Color	add $99
Fahrenheit 1280	add $159
Diamond Stealth	add $179

Monitor Upgrades

14" SVGA Viewsonic 6 1024x768 non-interlaced	add $99
14" SVGA Sony CPD 304 1024x768	add $275
14" SVGA NEC 4FG 1024x768 non-interlaced	add $499
15" Relisys 1520 1024x768 non-interlaced	add $150
16" Nanoa 9080 I 1280x1024 non-interlaced	add $699
16" Sony 1604 1024x768 non-interlaced	add $699

Printer Specials

- 35 Adobe Fonts
- 22HP 3 Fonts
- Free envelope tray
- 150 page paper tray
- HP & Mac Compatible
- 2 Megs RAM

Best Buy in The Industry

NEC Silentwriter Model 95 ..... $1399

UTER HQ
e It Systems"

Two Year Parts
Five Year Labor
WARRANTY
Including Toll Free
Suport 7 days
'til 10pm

Stargate
486/33 64k Cache
intel inside

(Add $65 for 256K Cache)
(Add $550 for EISA board)

- AMI BIOS
- 4MB RAM (Add $160 for 8MB RAM)
- 1.2MB 5.25" Floppy Drive
- 1.44MB 3.5" Floppy Drive
- 120MB Conner, Maxtor or Quantum Hard Drive (Add $200 for 200MB)
- Dual Hard/Floppy IDE Controller
- 1 Parallel, 2 Serial, Game Ports
- High Quality 101 Enhanced Keyboard
- 1024x768 .28 DOT Pitch 14" Color Monitor (Add $65 for non-interlaced)
- lMB Trident SVGA Card
- Choice of Mini-Tower, Medium-Tower, Full-Tower, or Desktop (All with 285 Watt Power Supply)

Option: SCSI Drive $75 Additional

$1699

Option: Only $1529 for 20SX

See video upgrade options opposite page

Stargate
486/50 64k Cache
intel inside

(Add $65 for 256K Cache)
(Add $550 for EISA board)

- AMI BIOS
- 4MB RAM Standard (Add $160 for 8MB)
- 1.2MB 5.25" Floppy Drive
- 1.44MB 3.5" Floppy Drive
- 120MB Conner, Maxtor or Quantum Hard Drive (Add $200 for 200MB)
- Dual Hard/Floppy IDE Controller
- 1 Parallel, 2 Serial, Game Ports
- High Quality 101 Enhanced Keyboard
- 1024x768 .28 DOT Pitch 14" Color Monitor (Add $65 for non-interlaced)
- lMB Trident SVGA Card
- Choice of Mini-,Tower, Medium-Tower, Full-Tower, or Desktop (All with 285 Watt Power Supply)

Option: SCSI Drive $75 Additional

$1999

See video upgrade options opposite page

COMPUTER HQ

Open 7 days a week, 8am-10pm

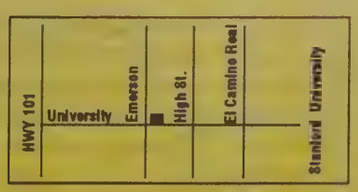
174 University Ave., Palo Alto, CA

Phone: 415/326-3100

FAX: 415/326-3154

Owned and Operated by Stanford Alumni & Students

Open 7 Days
Until 10pm



Conveniently located one and a half blocks from Stanford University

Kodak's Photo CD: Digital Imaging For The '90s

The Possibilities Are Endless

BY TONY REVEAUX

Just when you're coming to terms with QuickTime, along comes another bonanza for computer-aided communication. This time, the innovation comes not from the computer industry, but from the consumer side. This shiny gold disk is Kodak's answer to digital imaging in the '90s.

Photo CD's features and capabilities will serve many needs of the mass and professional markets. Some will have a direct impact; others will sneak up on us over time.

For the personal computer user, high-quality, high-resolution, full-color digital images will be accessible at low storage overhead and low cost, and opportunities for interactive multimedia applications will be expanded. For the consumer, more options for photofinishing, display, and archiving will be readily accessible. The most profound implications of Photo CD come from its ability to catalyze digital information technologies and services.

THE PHOTO CD SYSTEM

You bring a roll of 35mm film to a photofinishing outlet that has access to the Photo CD Imaging Management System, request a Photo CD transfer (24 exposures for $16–20). In one to three days, you get a gold CD disk in a plastic jewel box. The cover is a contact sheet with indexed color thumbnails, revealing the results of your photography.

You may order prints and slides to be struck from either the negatives or the Photo CD. In time, selected outlets will provide a customer-controlled viewing/editing station where you can preview the images and select special order prints with cropping, rotation, zooms, pans, and filters. Not to mention decorative borders, vignettes, and text—and eventually, sound. I tried out a prototype last year; its Fisher-Price style of console interface design was very easy to use, and should encourage the creativity of the average customer.

If you own a Kodak Photo CD player (about $400; available summer), which will also play audio CDs, or a Philips CD-I player, the images can be viewed on a TV set with the same addressable selectivity as audio CD, and with visual controls such as rotation, zooms, and pans. The player will replace the slide projec-

Tony Reveaux, a San Francisco-based consultant, is the editor of Computer Publicity News *and a contributing editor for* Artweek, *and writes the "MediaScan" column in* Film/TapeWorld. *He can be reached via Usenet (luna@well.sf.ca.us) or MCIMail 290-3008.*

Call NOW for GEMS Free Catalog of over 1000 Items!

Complete Custom Systems with 40MB Hard Drive

FOR AS LOW AS:

286 12 $613 **386SX 25 $715** **386 33 $839** **486 33 $1195**

PICK ONE ITEM IN EACH CATEGORY FOR YOUR SYSTEM:

MOTHERBOARDS
- 286-12MHz $63
- 286-16MHz 78
- 286-20MHz 85
- 386-16SX C&T 186
- 386-20SX C&T 220
- 386SX-25 165
- 386-25MHz NC ... 220
- 386-33Mhz 64K C 339
- 486-33MHz 64K C 672
- 486-50 256K C ... 1129
- 486-50 EISA 256KC 1964

MEMORY
- 1MB $50
- 2MB 98
- 4MB 180
- 8MB 358
- 16MB 710
- *Prices subject to change

KEYBOARD
- 101 Enhanced $25
- Keytronics 101 40
- Maxiswitch 101 33
- Focus FK2001 44
- Focus FK5001 65

CONTROLLER
- IDE F/H 15
- MFM 2F/2H 1:1 40
- RLL 2F/2H 1:1 58
- TNT 1800 ARLL ... 194
- IDE 2F/2H C, 512K 159
- SCSI 2f/2H 226

VIDEO CARD
- Monochrome $12
- CGA-Std Color 19
- VGA 256K 34
- Super VGA 1MB 69
- Pro DesignII, OEM .. 189

HARD DRIVE
- 40MB IDE 220
- 40MB MFM 249
- 60MB RLL 279
- 100MB IDE 339
- 120MB IDE 365
- 200MB IDE 619
- 200MB SCSI 619

CASE/POWER SUPPLY
- AT Mini DT 230W $77
- Mini-Tower 220W .. 67
- Mid-Tower 220W 94
- Full Tower 250W . 121

FLOPPY DRIVE
- TEAC 360K $57
- TEAC 720K 57
- TEAC 1.2MB 62
- TEAC 1.44MB 58
- 1.2 FDD 57
- 1.44 FDD 53

MONITOR
- 12" MONO $83
- 14" MONO 95
- 14" VGA .39 DOT .. 239
- 14" S/VGA .28 Int . 285
- 14" S/VGA .28N/Int357

All special pricing in this section is good for complete system purchase only as outlined on system worksheet. Note: Prices are subject to change without notice.

FREE

DOS OR INTEGRATED SOFTWARE WITH EACH SYSTEM PURCHASE!!

System Worksheet

Category		
Motherboard	$	
Memory	$	
Case/Power Supply	$	
Keyboard	$	
Floppy Dr. A:	$	
B:	$	
Controller	$	
Hard Drive	$	
Video Card	$	
Monitor	$	
I/O Card 2 S, 1 P, 1G	$	FREE
Software/DOS	$	FREE
Assemble, Test & Burn-in	$	25
Total	$	

Plus Shipping, Handling & Tax where applicable.

DRIVES

HARD DRIVES
- 20MB, MFM, SEAGATE ST-225 199
- 40MB, MFM, SEAGATE ST-251-1 255
- 40MB, IDE, Call for Mfg Brand 220
- 60MB, RLL, SEAGATE ST-277R-1 279
- 80MB, IDE, Call for Mfg Brand 305
- 100MB, IDE, Call for Mfg Brand 339
- 120MB, IDE, Call for Mfg Brand 365
- 170MB, IDE, Call for Mfg Brand .... CALL
- 200MB, IDE, Call for Mfg Brand 619
- 330MB, IDE/SCSI, Call for Mfg Brand . CALL
- 425MB, IDE/SCSI, ESDI, Call for Mfg Brand
- 676MB, SCSI/ESDI,Call for Mfg Brand CALL
- 1.2GB & 1.6GB SCSI, Call for Mfg BrandCALL
- 40MB, EXT Microsolutions 399
- 100MB, EXT Microsolutions 512

Prices are subject to change.

CD ROM
- 600MB, SONY, CDU541, 64K Buffer 546

TAPE BACK-UP DRIVES
- Colorado Ext. Kit, 40MB-120MB 329
- Colorado Drive Cable 10
- 40MB Microsolutions BkPk Ext. 387
- 80MB Microsolutions BkPk. Ext. 447
- DC-2000/DC2000XL Tape 23/28
- TEAC CT-600H/CT600N 19/27

FLOPPY DISK DRIVES
- TEAC 360K, 5.25, FD55BR 57
- TEAC 1.2MB, 5.25, FD55GFR 62
- TEAC 720K, 3.5, FDD235F 57
- TEAC 1.44MB, 3.5, FDD235FH 58
- SONY 1.44MB, 3.5, MPF17W52D 59
- TEAC 2.8MB, 3.5, FDD235J 102

EXTERNAL FLOPPY DRIVES
- 360K/1.2MB/720K/ 1.44MB Bkpk, Connects thru Par Port 195
- 2.8MB Bkpk, Connects thru Par Port Accepts 720K, 1.44MB & 2.8MB Disks 235

POWER SUPPLIES

- 150w, Std Size for XT Desktop 34
- 200w, Std Size for XT Desktop 40
- 200w, Std Size for XT Desktop UL 49
- 230w, Std AT/DT or FS Vert Case 43
- 250w, Std AT Desktop only 47
- 220w, Std At/Dt or FS Vert. UL 48
- 300w, Std AT/DT or FS Vert. UL 83
- 200w, Mini PS UL Listed 45
- 230w, Mini PS 42
- 250w, Mini PS, UL Listed 59
- 300w, Mini PS, UL Listed 99
- 300w, Turbo Cool Bit in line conditioning DT/ VFS PC Power & Cooling USA 2yr warrnty 179
- 450w, Turbo Cool Bit in line conditioning DT/ VFS PC Power & Cooling USA 2yr warrnty 339

CONTROLLERS

- XT Floppy Disk Controller, 2 Dr 12
- XT/AT FDC+, 360K-1.44MB, 2 Dr 22
- XT/AT Super FDC+, 4 Dr., All Types .. 32
- XT/AT Ultra FDC+, 4Dr, All Types +2.88MB 79
- XT/AT Compaticard II, 2 Dr, Co-Exist 76
- XT/AT Compaticard IV, 4 Dr, Co-Exis t ... 115
- MFM 8Bit WD GEN CLONE, H/Only, 2 Dr 39
- RLL 8Bit DTC 5160, H/Only, 2 Dr 63
- SCSI 8Bit ST-01, H/Only, 2 Dr, Seagate Only ... 45
- SCSI 8Bit ST-02 F/H, 2 Dr, Seagate Only . 45
- MFM 8Bit LS-6220, 2 Floppy/2 Hard Dr ... 75
- IDE 16 Bit, 2 Floppy/2 Hard Drive 15
- IDE 16Bit, 4 Floppy/ 2 Hard Drive 35
- IDE Multi. IO 16Bit, 2FD/2HD, 2s, 1p, 1g . 22
- IDE Super Multi. IO, 4FD/2HD, 2s, 1p 49
- MFM 16Bit Generic F/H, 1:1 45
- MFM 16Bit WD-1006-V-SR2 Clone, F/H, 1:1 65
- MFM 16Bit DTC 7280, F/H, 1:1 63
- MFM 16Bit DC-2 4FD/2HD, 1:1 56
- RLL 16Bit DTC 7287, F/H, 1:1 74
- RLL 16Bit 1100-SR4, 4FD/2HD, 1:1 ... 69
- ARLL 16Bit TNT-1800, F/H Increase Disk Storage 90% 1:1, 64K Cache 219
- SCSI 16Bit Adaptec 1542, F/H 325
- SCSI 16Bit TNT-4050, F/H 265
- ESDI 16Bit DTC-6280, F/H 149

CALL FOR CACHING CONTROLLERS

HOW TO VIDEOS

35+ Titles!

COMPLETE LINE OF NETWORK INTERFACE CARDS

CALL FOR PRICING!

KEYBOARDS

- 101 ENH Keyboard, Non-click 25
- 101 ENH Keyboard, Non-click Maxiswitch 33
- 101 ENH Keyboard Keytronic Lg. Ent 40
- 101 ENH Keyboard Click GDT 28
- 101 ENH Keyboard Click NMB 29
- 101 ENH Keyboard Click Focus, FK2001 . 44
- NTC 101, 12 Func. Keys Top & Left ... 49
- Focus FK-5001: 130 Keys, 12 Func Keys Top & Left Side, Calc, 8 Arrow Keys ... 79
- MCK-142 Pro: 142 Keys, 24 Special Programmable Keys-Prog thru KB or SW, Fast Repeat Key 99
- Maxiswitch Fastracker 101 Trackball 149
- KT-30 101 Keybd, Trkball, Ser/Bus 89/99
- Small Compact Size Keyboards 49

MOTHERBOARDS

- XT-12MHz, ØK to 1MB, 8 slots, Juko BIOS 34.50
- XT-31MHz, 286-10 CPU, 8-8 bit slots, ØK-1MB 51
- 286-12 SC/4MB, ØK to 4MB, AMI BIOS 63
- 286-16 SC/4MB, ØK to 4MB, AMI BIOS 78
- 286-20 SC/4MB, ØK to 4MB, AMI BIOS 85
- 386SX-16 C&T ECS, ØK to 32MB, 8 slots, AMI 186
- 386SX-20 C&T ECS, ØK to 32MB, 8 slots, AMI 220
- 386SX-25 OPTI, ØK to 16MB, 8 slots, AMI 165
- 386DX-25 Non-Cache, ØK, AMI BIOS 220
- 386DX-33 64K Cache, C&T, AMI BIOS 289
- 386DX-40 64K Cache, GEN, AMI BIOS 325
- 486DX-33 64K Cache, GEN, AMI BIOS 645
- 486DX-33 256K Cache, GEN, AMI BIOS 696
- 486DX-50 64K Cache, GEN, AMI BIOS 1059
- 486DX-50 256K Cache, GEN, AMI BIOS 1129
- EISA 486-33 256K Cache, ASUS, AMI ... 1375
- EISA 486-50 256K Cache, ASUS, AMI 1964

MEMORY PRODUCTS

- 576K Memory Expansion for XT 20
- 384K Multi IO, ØK, S/P/G, Cal Clk 55
- Everex Maxi magic EMS for XT, 2MB, ØK 68
- Everex RAM 3000, ØK to 3MB 93
- Everex RAM 10000, ØK to 10MB 143
- 64K, 150ns, 1 x 64K ... .75
- 64K, 120ns, 1 x 64K ... .85
- 64K, 100ns, 1 x 64K ... .95
- 64K, 120ns, 4 x 64K . 1.50
- 64K, 100ns, 4 x 64K . 1.85
- 256K, 150ns ..... .85
- 256K, 120ns ..... .89
- 256K, 100ns 1.25
- 256K, 80ns 1.35
- 256K x 4, 80ns 4.95
- 1MB 80ns, 1 x 1MB 4.95
- 256K 80ns, SIM/SIP . 12
- 256K 70ns, SIM/SIP . 14
- 1MB 80ns, SIM/SIP ... 43
- 1MB 70ns, SIM/SIP ... 44
- 40MB 70ns, SIMM .. 169
- 4MB 60ns, SIMM 175

Memory prices are subject to change without notice.

MODEMS/FAX CARDS

- 2400 Internal w/Software, MNP 7 44
- 2400 Quicktel Internal, 5 yr Fact Wrty 63
- 2400 Internal Modem w/MNP 5 SW ... 75
- 2400 OEM Zoom Internal w/SW 54
- 2400 OEM Zoom External w/SW 69
- 2400 Mini Pocket Modem 77
- 9600 Internal Modem MNP5, SW 327
- 9600/2400 Fax-Modem 20Hrix, S-R, SW ... 82
- 9600/2400 Fax-Modem Pocket for Portbls 175

GEMS BULLETIN BOARD

MODEM LINE: 1-408-894-8690

Sign onto Bulletin Board or Call GEMS Sales for Membership Details!

CASES

- XT Actual PC Style 4 Exp Dr. Bays 25
- XT/AT Like, 2 Exp/2Snt Dr. Bays 27
- AT Baby Size Desktop 36
- AT Mini Desktop, 200w/Digital 83/87
- AT Slim Line-Low Profile w/200w 85
- AT Mini Vertical 220w PS 67
- AT Mid-Size Vertical w/230w 94
- AT Full Size Vert. 6 Exp. +2 Int. Dr. Bays, 250w PS, FS or BS MB 121
- AT Special 12 slot FS Vert. Case, 6 Exp. Bays (Please specify PS) ..... CALL
- LCD Lunch Box Style Portable, 640 x 400 dual scan CGA, 200w PS 577
- LCD Lunch Box Style Port. VGA, 180w ... 827
- Gas Plasma Port., 640 x 400 VGA, 180w 1179

CABLES/ADAPTORS/MISC.

- XT Hard Drive Set 3.95
- XT Hard Drive Daisy Chain 4.95
- XT Hard Drive Data Cable 3
- XT Floppy Drive Cable 3.95
- AT Cable Set, 3 Cables 5.95
- XT/AT Extra Long 6' FD/HD Cable Set 17
- XT/AT Extra Long Floppy Cable 9
- XT/AT Extra Long Hard Drive 9
- IDE, 40 Pin Cable for Hard Drives ... 2.50
- SCSI, 50 Pin Cable for Hard Drives . 4.95
- Parallel Printer Cable, 6' 3.95
- Parallel Printer Cable, 6' Molded 4.95
- Parallel Printer Cable, 10' Molded ... 5.95
- Parallel Printer Cable, 6' Cent to Cent ... 5.95
- Serial Modem Cable, 6', M to F 4.95
- Serial Modem Cable, 10', M to F 6.95
- Serial Cable, 15', 25 Pin, M to F 9.95
- Serial Cable, 25', 25 Pin, M to F 17
- Serial Cable, 50', 25 Pin, M to F 29
- Null Modem Adaptor, 25 Pin, M to F 4.50
- Monitor Expansion Cable, 6'/10' ... 3.95/6.95
- Serial Port Adapt, 9 Pin F to 25 Pin M .5
- Gender Changer, 25 Pin F to 25 Pin M .. 3.50
- Serial Port Adaptor, 25 Pin F to 9 Pin M 3
- Gender Changer, 9 Pin M to 9 Pin M 3.50
- VGA , 9 Pin to 15 Pin OR 15 Pin to 25 Pin 10.
- VGA Exp., Universal for Sony/NEC 9

Too Many More to List — SEE CATALOG!

MOUSE•TRACKBALL•JOYSTICK

- MOUSE, 3 Button, Ser, Dr. SW 13
- QMOUSE, 3 Button, Ser, Dr. SW/Paint SW 24/31
- Logitech Mouseman, 3 Button, Ser/Bus 68/75
- Z-Nix Super Cordless Mouse 65
- See Mouse Bundled w/Windows under DOS.
- Qtronic Mighty Trackball 35
- Logitech Trackman Ser/Bus 79/89
- Joystick for PC 12

VIDEO BOARDS

- Monochrome Graphic Card LPT1 (GOOD) 12
- Monochrome Graphic Card, LPT1-3 (Better) 17
- Dual Mono/Clr Graphics Card w/Port . 19
- CGA, Color Graphics Adaptor w/Port . 17
- VGA Oak Chip, 800 x 600, 16Bit, 256K 34
- VGA Oak Chip, 1024 x 768, 16Bit, 512K ... 50
- VGA Oak Chip, 1024 x 768, 1MB 69
- Trident Chip, 1024 x 768, 1MB 77
- Tseng 4000, 1024 x 768, 1MB 104
- Diamond Speed Star (OEM), 1024 x 768 129
- Prodesigner II (OEM), 1024 x 768, 512K 125
- Prodesigner IIs (OEM), 1024 x 768, 512K 149

VIDEO MONITORS

- Mono 12" 720 x 350, Amber 82
- Mono 14" 720 x 350, Amb/Wht 95
- Mono/VGA 14" 640 x 480, Wht 116
- Multi-Scan, 1024 x 768, .28 Dot 307
- VGA 640 x 480, 39 Dot 249
- VGA-ViewSonic V2, 14", 1024 x 768, .28 Dot .. 309
- ViewSonic V4 14", 1024 x 768, .28 Dot ... 335
- V5 14" 1024 x 768, N/Int, .25 Dot 559
- V5e 14" 1024 x 768, N/Int, .28 Dot, 72H . 487
- VGA ViewSonic V6, 14", 1024 x 768, N/Int, .28 393
- VGA ViewSonic V7, 17", 1280 x 1024, .28 1290

I/O & MULTIFUNCTION

- XT Serial, 2 Ports, 2nd Port Opt. 10
- XT Serial, 2 Ports, 2nd Port Opt. 13
- XT Serial, 4 Ports, 2nd Ports Install 67
- XT 2nd Serial Port Chip & Cable Set 8
- I/O Plus Clk, Cal, Par, Se, Game 34
- CLOCK Card, Cal & Clk Only 9
- CLOCK Slotless, no-slot clock 23
- 384K MULTI I/O, Clk, Cal, P, S, G 55
- Super MULTI I/O: Flppy Ctlr 360K-1.44MB, Cal, Clk, P, S, G Ports 39
- XT/AT Par. Printer Port, Sets to LPT1 only 8
- XT/AT Par. Printer Port, Sets to LPT1, 2, or 3 9
- XT/AT Game Card, 2 Ports 8
- AT Ser. Card, 2 Ports, 2nd Port Opt. COM 1-4 ... 15
- AT Ser. Card, 4 Ports Installed. COM 1-8 67
- 2nd Serial Port Chip & Cable Set 10
- AT I/O #1, 1S, 1P, 1G. COM 1-4/LPT 1-2 ... 11
- AT I/O #3, 2S, 1P, 1G. COM 1-4/LPT 1-2 ... 13
- AT I/O #4, 2S, 2P. COM 1-2/LPT 1-3 26

DOS

- MS DOS 3.3 w/GW Basic, OEM 43
- MS DOS 4.0.1 w/GW Basic, OEM 48
- MS DOS 5.0 OEM/Original 43/69
- DR DOS 6.0 69
- MS Windows 3.0, OEM 43
- MS Windows 3.0 w/Z-Nix Mouse 59
- MS Windows 3.0 w/Logitech C9 Mouse 65

Call or write for shipping details. A $3 handling charge is applied to all orders plus a minimum of $5 freight. $7 COD charge applied to all COD orders.

- *No Surcharge on VISA/MC*
- *30 Day Money Back Guarantee on Hardware only.*
- *Software, Books and All Training Products are Non-Refundable. GEMS to replace any defective software or training products.*
- *One Year Warranty • All Price subject to change without notice.*
- *15% Restocking Fee applies for Non-Defective Returns.*
- *RMA Number Required for Returns.*
- *Terms to Qualified Accounts.*

All Prices subject to change without notice.

DEALERS WANTED
Call For Details

GEMS computers, inc.
2115 Old Oakland Road
San Jose, CA 95131
TECH SUPPORT: 1-408-473-0800

CALL TOLL-FREE TO ORDER:
1-408-456-9300
FAX: 1-408-473-0826

WHY PAY MORE???

CASE & POWER SUPPLY

MINI TOWER (200W) w/o LED	$60
MED TOWER/6 SLOTS/LED	87
FULL TOWER CASE/235W	115
AT BABY CASE w/PS	55/68
XT 150W/200W PS	31/36
AT 200W/230W PS	40/45
WINDOWS 3.0 + MOUSE	62
Maxiswitch KB 101	37
Keytronic KB 101	38
2S/1P/1G IO CARD	18
IDE with I/O	15/23
MFM 1:1 2F/2H	48
Future Domain SCSI H/F/C	105

FLOPPY & HARD DRIVES

Teac 1.2/1.44 FD. w/Frame	$57/55
Conner 42 MB IDE HD	185
Teac 80 MB	265
Connor 64 MB HD	235
Maxtor 130 MB, 16ms	339
Conner 120 MB, 17ms	335
Conner 200 MB, 16ms	545
Sony CD-ROM Int/Ext	LOWEST

NEW LOWEST PRICES

386-25 MHz, w/o CPU	$115
386-33 MHz, 64K Cache w/o CPU	169
386-40 MHz, 128K Cache w/o CPU	185
486-33 MHz, 128K Cache w/o CPU	195
486-33 MHz, 256K Cache w/o CPU	235
386SX-16/25 MHz w/CPU	158/165
286-12/16 MHz w/CPU	63/78

Call for current CPU price

MEMORY UPGRADES

1MBx9-80/70 SIMM	$34/35
4MBx9-80 SIMM	132
CPU & DRAM	LOWEST
HP LASERJET II, IIP, III, IID. MEMORY UPGRADE	
1MEG Kit	85
2MEG/4MEG Kit	125/210
Kit w/0	42

All HP memory cards are 14 days money back guarantee.

MONITOR & VGA CARD

Tseng Lab, 1024x768, 1MB	$109
Non-inte VGA card 1024x768, 256 colors, 1MB Trident chip	78
Non-inte VGA card 1024x768, 256 colors, 1MB Tseng lab chip 0 wait state	129
Orchid Pro-Designer IIS	169
Orchid Fahrenheit	255
Puretek 14" non-interlace multisync 72 Hz 1024x768 0.28mm SVGA	340
Relysis RE1420 1024x768 S Multisync	324
Relysis 15" SVGA Non-Inte SVGA	405
SVGA 1024x768 ETC .28mm	285
VGA 640x480 MGC	215
SVGA 1024x768 .28mm Power II	275

FAX/MODEM CARD

Sound card & speakers	$59
Zoltrix 96/24 fax modem	85
2400 Baud Int/Ext Modem	48/72

BOZEMAN MARKETING GROUP, INC.
16 Corning Ave., Suite 120, Milpitas, CA 95035
(Inside United Center on S. Main St. & Corning)
Mon-Sat 10am-6pm
Tel: (408) 263-3158
Fax: 263-6763

tor and screen, just as the camcorder/VCR has replaced home movies. Kodak plans to have retail photofinishing service outlets processing Photo CD available worldwide this summer, with one hundred thousand in place by year's end, and two hundred thousand by the end of 1993.

PHOTO CD ON YOUR PC

Through playback on an XA-compatible CD-ROM drive, you will be able to bring Photo CD images into your PC and Macintosh environments and implement them in your graphics, desktop publishing, and multimedia programs. Each image document supports five resolutions: thumbnail, snapshot, TV display quality, HDTV (for high-resolution image handling), and full detail, which is adequate for color prepress.

Kodak's Photo CD Access software will support Windows 3.0 for 24-bit RGB, 8-bit RGB (VGA), 4-bit RGB (VGA and EGA), 4-bit and 8-bit grayscale, bi-tonal, and PhotoYCC scheme. For the Macintosh System 6.05 and higher, it will support RGB, grayscale, bi-tonal, PhotoYCC scheme, and all color QuickDraw pixel depths, including 24-bit. The Windows edit is in DIB, Bitmap, Metafile, or Link; Macintosh is in PICT. Export formats for Windows are EPS, TIFF, RIFF, PCX, and BMP (DIB); for Macintosh, PICT, EPS, and TIFF.

The following vendor's programs will feature Photo CD support within the next few months as Kodak begins its installation of Photo CD facilities:

•Adobe is working with Kodak to ensure that its Macintosh-based Photoshop image retouching and manipulation program is fully compatible with Photo CD. Some developers are already using a prototype of a software module that imports Photo CD files directly into Photoshop.

•Photo CD for Windows isn't released yet either, as Kodak's libraries are not yet final, but the Windows environment will be well endowed with opportunities.

•Aldus's PhotoStyler will be adding direct file support for Photo CD.

•The Image-In Color Professional photo retouching program will have an import module, and Media Cybernetics' Halo Desktop Imager Windows 3 product will also read in Photo CD. These programs will recognize and accept a Photo CD document, which you will be able to read in from the Photo CD photo pack at one of the five supported levels of resolution, then you save as another appropriate graphic format such as PICT, EPS, TIFF, PCX, IMG, BMP, TGA, or GIF.

QUICKTIMING

Apple Computer has been working with Kodak for some time to integrate Photo CD into the next version of the QuickTime software extension. Because this move will fold Photo CD support into the operating system, virtually all Macintosh application software will be able to access Photo CD files directly.

The current Apple CD SC Plus CD-ROM drive can read single-session Photo CD images, and Apple will be releasing an enhanced, multiple-session drive later this year. One of Photo CD's intriguing capabilities is that it can be written once, and then written to as many times as you want until the storage capacity is fulfilled. That amounts to one hundred hi-res images, or up to eight hundred at TV display quality. Up to seventy-two minutes of CD-quality sound or eight hours of stereo sound, and combinations of text and graphics can also be added. The Photo CD is as important as an archival storage medium as well. Some users may keep the Photo CD as "permanent" backup for negatives; others will keep the film negatives as backup for the Photo CD applications.

THE DIGITAL ALTERNATIVE FOR IMAGING

Why not access these images with a digital camera and input them directly into the computer? For the professional service bureau or in-house production facility, a $100,000 high-level Kodak or Sony system will do just that. But it's going to be some years before most people can afford a high-resolution digital camera unit.

Logitech's FotoMan, a 96dpi, 256-gray-level digital still camera, lists for $799. But it takes low-res snapshots, not high-res color. FotoMan, like the Canon XapShot and Sony Mavica, is straining RAM chip and Charged Couple Device technologies to the contemporary limit. These camera systems are finding applications in real estate, inventory, employee identification, databases, and presentations.

Graphics arts professionals' solutions for high-resolution digital photography often include the input of original transparencies through a slide scanner system, such as a BarneyScan or Nikon. A video camera signal input through a frame capture board is another solution. While the images may not be very high resolution, the results can be very practical and effective for multimedia and presentation production.

Kodak's Photo CD system does an end-run around those limitations by providing a global, mass-market base to support economically priced digital imaging. The installed base of image capture devices—35mm cameras—ranks in the millions, and they are in the hands of people who already know how to use them.

Kodak still manufactures Kodachrome

Continued on page 252

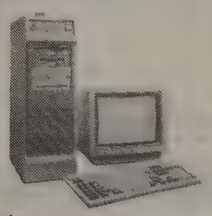
AiM FOR THE BEST !

5 Years Labor & 1 Year Parts Warranty On All Systems

FREE Software Installation With System Purchase

We Do Custom Systems Configuration

intel® 486-33/50MHz EISA True 32-bit Work Station

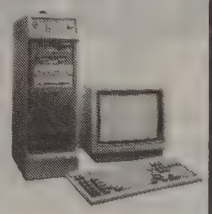


- *Intel 486-33/50MHz
- *256KB Cache memory
- *4MB DRAM (up to 64MB)
- *Orchid EISA ProDesigner IIs 40% performance boost up support up to 1024x768 & 72Hz 32,768 Hi-Color RAMDAC
- *TEAC 1.2MB Floppy Drive
- *SONY 1.44MB Floppy Drive
- *101 Enhanced Keyboard
- *Logitech Dexxa Mouse
- *Maxtor 213MB 15ms SCSI Hard Drive
- *Data Technology EISA SCSI controller w/512KB Cache
- *On-Board Integrated 2FD/2HD IDE Controller
- *On-Board Integrated 2 Serial & 1 Parallel Ports
- *Eight 32-bit EISA Expansion Slot
- *Full Tower Case w/285 Watts Power Supply
- *Microsoft DOS 5.0
- *AMI EISA BIOS
- *Support MS-DOS, SCO UNIX, Interactive UNIX, Netware 386

Complete Sys. $ 3099/3449

(Monitor not included)

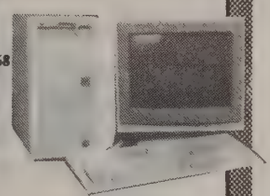
486-33/50 MHz ISA 64KB Cache 120MB HD



- *Intel 486-33/50 MHz
- *64KB WriteBack Cache (up to 256 KB)
- *4MB DRAM (up to 32MB)
- *125MB 12ms IDE Hard Drive
- *SAMSUNG SyncMaster 3 1024x768 0.28dp SVGA monitor
- *Trident 8900C 1024x768 w/1MB SVGA Graphic Card
- *TEAC 1.2MB Floppy Drive
- *SONY 1.44MB Floppy Drive
- *101 Enhanced Keyboard
- *Logitech Dexxa Mouse
- *2HD/2FD IDE Controller w/ 2 serial,1 parallel & 1 game
- *Tower Case w/285 Watts Power Supply
- *Microsoft DOS 5.0

Complete Sys. $ 1799/2079

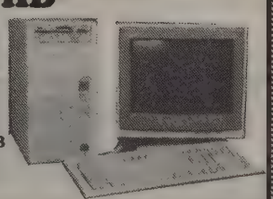
386-33/40 MHz ISA 64KB Cache 105MB HD



- *Intel 386-33/AMD 386-40
- *64KB WriteBack Cache (up to 256 KB)
- *4MB DRAM (up to 32MB)
- *105MB 17ms IDE Hard Drive
- *SAMSUNG SyncMaster 3 1024x768 0.28dp SVGA Monitor
- *Trident 8900C 1024x768 w/1MB SVGA Graphic Card
- *TEAC 1.2MB Floppy Drive
- *SONY 1.44MB Floppy Drive
- *101 Enhanced Keyboard
- *Logitech Dexxa Mouse
- *2HD/2FD IDE Controller w/2 serial,1 parallel & 1 game
- *Mini Tower Case w/230 Watts Power Supply
- *Microsoft DOS 5.0

Complete Sys. $ 1369/1399

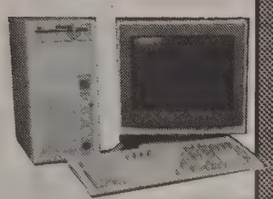
386-25MHz SVGA 80MB HD



- *Intel 386-25MHz
- *2MB DRAM (up to 8MB)
- *80MB 16ms IDE Hard Drive
- *Super VGA 1024x768 0.28dp Color Monitor
- *Trident 9000 1024x768 SVGA Graphic Card w/512KB
- *TEAC 1.2MB Floppy Drive
- *SONY 1.44MB Floppy Drive
- *101 Enhanced Keyboard
- *Microsoft compatible mouse
- *2HD/2FD IDE Controller w/2 serial,1 parallel & 1 game
- *Mini Tower Case w/230 Watts Power Supply
- *Microsoft DOS 5.0

Complete System $ 1179

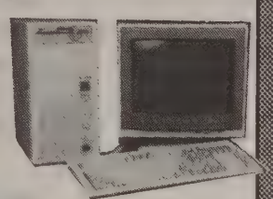
386SX-25MHz w/32K Cache SVGA 40MB HD



- *AMD 386SX-25MHz
- *32KB WriteBack Cache (up to 64KB)
- *2MB DRAM (up to 16 MB)
- *40MB 22ms IDE Hard Drive
- *Super VGA 1024x768 0.28dp Color Monitor
- *Trident 9000 1024x768 SVGA Graphic Card w/512KB
- *TEAC 1.2MB Floppy Drive
- *SONY 1.44MB Floppy Drive
- *101 Enhanced Keyboard
- *Microsoft compatible mouse
- *2HD/2FD IDE Controller w/1 serial,1 parallel & 1 game
- *Mini Tower Case w/230 Watts Power Supply
- *Microsoft DOS 5.0

Complete System $ 1099

386SX-16/25MHz SVGA 40MB HD



- *AMD 386SX-16/25MHz
- *1MB DRAM (up to 16MB)
- *40MB 22ms IDE Hard Drive
- *Super VGA 1024x768 0.28dp Color Monitor
- *Trident 9000 1024x768 SVGA Graphic Card w/512KB
- *1.2MB Floppy Drive or 1.44MB Floppy Drive
- *101 Enhanced Keyboard
- *Microsoft compatible mouse
- *2HD/2FD IDE Controller w/2 serial,1 parallel & 1 game
- *Mini Tower Case w/230 Watts Power Supply

Complete System $ 899/929

Monitors

Northman SVGA 1024x768 .28	$289
Northman SVGA 1024x768 .28 NI	$329
SAMSUNG 15" SyncMaster 15 .28 NI 70Hz	$549
SAMSUNG 17" SyncMaster 4 .31 NI 70Hz	$899
ViewPerfect 3 1024x768 .28	$335
ViewSonic 4E 1024x768 .28	$325
ViewSonic 5E 1024x768 .28 NI 72Hz	$449
ViewSonic 5+ 1024x768 .25 NI 70Hz	$549
ViewSonic 6 1024x768 .28 NI	$369
ViewSonic 7 17" 1280x1024 .28 NI	$1149
ViewSonic 8 20" 1280x1024 .31 NI	$1659
SONY 1304S 1024x768 .25 NI	$559
SONY 1304S 1024 x768 .25 NI (for MAC)	$585
SONY 1604S 17" 1024x768 .25 NI 70Hz	$1025
TAXAN 795 14" 1024x768 .25 NI 70Hz	$569
NEC 15" 3FGx 1024x768 .28 NI	$689
NEC 15" 4FG 1024x768 .28 NI 70Hz	$779

Graphic Cards

Oak 800x600 w/256KB	$40
Trident 8900c 1024x768 w/1MB	$77
Trident 9000 1024x768 w/512KB	$57
Tseng Lab 1024x768 w/1MB	$109
Paradise 1024x768 w/1MB	$109
Orchid Pro-Designier IIs w/1MB & Hi-Color (w/system)	$175
Orchid Fahrenheit w/1MB & Hi-Color (w/system)	$269
Diamond SpeedStar w/1MB Hi-Color	$169
Diamond Stealth w/1MB Hi-Color	$285
ATI Ultra Graphic w/1MB	$565
ATI Graphic Vantage w/1MB	$349

Softwares

Microsoft DOS 5.0 Upgrade	$58
Digital Research DR-DOS 6.0	$66
Microsoft Windows 3.1(New Release)	$98
Microsoft Windows 3.1 upgrade	$48
Microsoft Excel 3.0 for Windows	$125
Microsoft Entertainment Pack 1-3	$28@
Microsoft Flight Simulator 4.0	$40
Microsoft Word 2.0 for Windows	$125
Microsoft DOS 5.0 Full Version	$49
Microsoft Windows 3.0 w/system purchase	$45
IBM OS/2 Version 2.0 (New Release)	$159
WordPerfect for Windows	$125
Central Point ANTI-VIRUS V2.0	$90
Norton Antivirus V2.0	$90
BitFax for Windows	$45
And much more in incredible low price !!!	

Miscellaneous

Logitech Serial MouseMan w/MouseWare($10 rebate)	$68
Logitech Bus MouseMan w/MouseWare ($10 rebate)	$70
Logitech Serial TrackMan w/MouseWare($15 rebate)	$71
Logitech Coreless MouseMan ($15 rebate)	$90
Logitech Scanman 256 w/OCR 400DPI ($25 rebate)	$339
Kensington Expert Mouse Track Ball	$109
KeyTronic Bus mouse	$39
KeyTronic 101+ enhanced keyboard	$45
Maxiswitch 101 enhanced keyboard	$39
Northgate Omni 101/102 enhanced keyboard	$72
101 enhanced keyboard	$25
Zoltrix 2400/9600 Send & Receive Fax Modem w/MNP5	$79
Zoltrix 2400 Baud Internal Modem	$48
TEAC 1.2MB/SONY 1.44MB Floppy Drive	$58/54
Motherboard (286, 386SX, 386, 486, EISA)	call
Hard Drive (IDE, SCSI, ESDI)	call

Ask For Upgrade Option On AMI, Micronics, Mylex, Orchid Systems

AiM Computers

1741-C Clayton Road, Concord, CA 94520

TEL: (510) 687-2822 FAX: (510) 687-5276

Hours: M-F 10-6:30

Sat 10-5 Sun 12-4

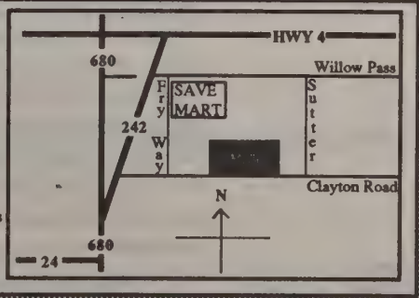
master charge VISA

AiM Quality Guarantee

- **5 Years Labor & 1 Year Parts**
- **72 Hours Burn-In**

Price subject to change without notice
Not responsible for typographical error
Trademarks are registered by the respective companies
Content subject to change without notice

100% Financing Available

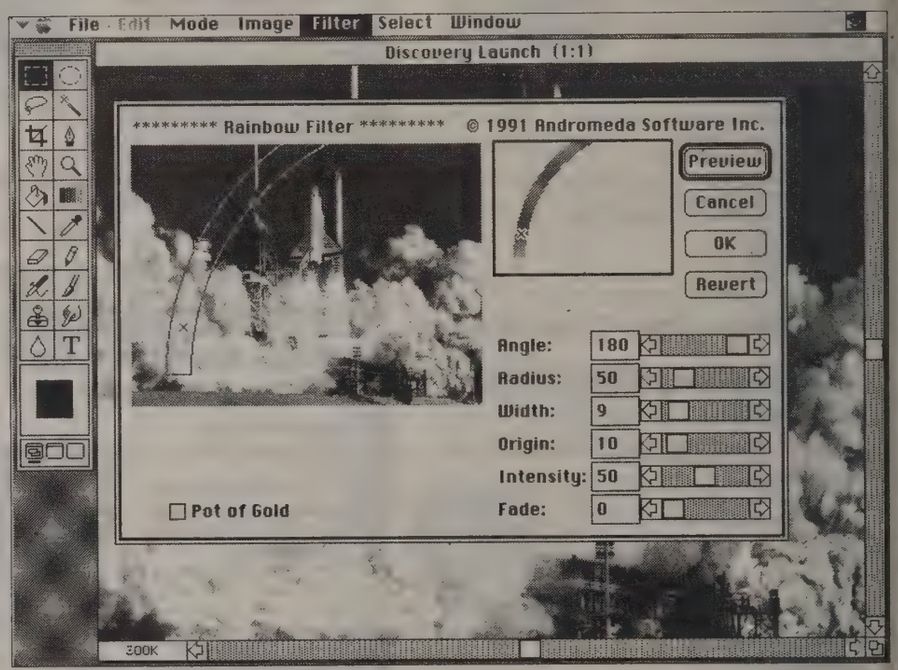


The World Of Photoshop

BY MATTHEW LEEDS

For every class of applications and computer platform, there's a single program that sets the standard. For Mac-based image editing in the bit-mapped world, it's Adobe Photoshop. No other program has Photoshop's range of functions, ease of use, and cadre of dedicated users.

Photoshop is an image editing, color painting, and color separating and printing program. It offers full control over the color depth, resolution, and size of an image file. With sufficient RAM and disk storage, you can work on images of any size. It provides tools to alter the color balance, contrast, brightness, color depth, and other aspects of images. It also provides tools for color management in the pre-press and printing environment.



The Andromeda Rainbow filter interface

WORKING WITH PHOTOSHOP

Photoshop can read and save in a variety of file formats. It handles almost all Macintosh formats, including EPS, PICT, and Paint files. Through its ability to integrate new features (called plugins), it can also be expanded to directly accept scanned images, video captured images, and other sources.

A key element of Photoshop is its ability to maintain discrete layers, or as they are known in the program, channels. Each channel contains an 8-bit image, or mask, and can be manipulated independently. Another key element is its ability to have multiple image files open concurrently. All editing and manipulation options are available to each open file, and an undo function is maintained for each file independently.

Working with large image files can choke other programs. Photoshop handles large files with two special features that make the process less painful.

First, it has its own virtual memory system. If you attempt to open an image file that requires more memory than you have, Photoshop will buffer some of that image to your hard drive. Photoshop's virtual memory is much faster than that in System 7. It does require a lot of free space, but you can specify the hard drive to be used for virtual memory buffering. If you've got *lots* of RAM, you can buffer to a RAM disk.

Second, you can interrupt screen redraw at any time and select a new command or menu item. This can also speed up your work.

For those working in the printing industry, Photoshop offers full support for PANTONE matching (as well as the Focoltone and Trumatch systems), under color removal, gray component replacement, PostScript 2, gamma curve correction, duotone editing, and CMYK editing. It also provides controls needed to adjust printed output for different kinds of output devices and paper stocks. It is now possible to colorimetrically calibrate a system to color match to just about any printer.

The latest version of Photoshop (v2.0.1) also offers the ability to save thumbnails of each image file, called previews. It supports Publish and Subscribe, is 32-bit clean, and supports the QuickTime JPEG compressor. It also provides its own Adobe JPEG compressor that adds support for compressing grayscale, RGB, and CMYK files to QuickTime's PICT support. There is also support for importing object-oriented PICT files (from MacDraw, Canvas, etc.) as anti-aliased Photoshop files. TIFF files can now be saved with caption information, and

Photoshop lets you have multiple image files open concurrently. All editing and manipulation options are available to each open file, and an undo function is maintained for each file independently.

Copyright © 1992 by Matthew Leeds. All rights reserved.

Announcing the new
(Can you believe it?)

Desktop Everything Center

at Computer Showcase

Mac and Video Toaster rentals for:
- Color graphic design
- 3D animation and graphics
- QuickTime™ "movies"
- Multimedia presentations
- Video online & offline editing and titling
- Plain old desktop publishing

Output to Print:
- Color Postscript Printer
  (RasterOps Dye Sublimation printer with 36MB of RAM)
- B&W Laserwriter NTX

Output to Disk:
- Syquest 44Meg or your SCSI Drive

Output to Video:
- S-VHS or your deck
- Single Frame Animation Controller

2739 Geary Boulevard (near Masonic), SF
(415) 563-1953 or 864-4750 FAX 563-0137
We're open alot and we'll stay open more if you need it.

Software

- **Mac DTP**
  Quark Xpress 3.1
  PageMaker 4.2
- **Mac Graphics**
  Photoshop 2.0.1
  Illustrator 3.2
  Painter by Fractal Designs
- **Mac 3D**
  Ray Dream Designer 2.0
  SwivelMan 3D Pro 2.0
  Strata Vision 3D 2.0
- **Mac MultiMedia**
  Premiere
  DiVA Video Shop
  Macromind/Paracomp Director
  Macromind/Paracomp Magic
  Macromind/Paracomp MediaMaker
- **Video Toaster/Amiga Graphics**
  Art Department Pro
  DCTV
  Toaster Paint
  Professional Draw 2.0
- **Video Toaster/Amiga 3D**
  Pixel 3D
  Imagine
  Lightwave
- **Video Toaster/Amiga Video**
  Broadcast Titler
  Toaster 2.0
  Pro Video CG II
- **Video Toaster/Amiga MultiMedia**
  Amiga Vision
  Showmaker
- **Video Toaster/Amiga DTP**
  Professional Page 3.0

What we have that other places don't (probably, maybe)

- Coffee, tea, juices and snacks.
- Obscure and secluded location near the burnt-out Sears building.
- Mac - Video Toaster link to video.
- A/B roll S-VHS editing suite
  Production & Post Production
  (with our operator only).
- Expert sales, consulting, training and system configuration.
- Flexible hours, so don't need to leave just as you get your project rolling.
- Pricing by the hour or the project.
- Frosty, the 120 pound Rottweiler.

Hardware

- 2 Mac IIci's, 20Megs Ram, 520Meg Drive
- 2 Video Toaster workstation, '030, 25MHz
  9 Megs RAM, 170 Meg Drives, 2 TBC II's
- 44 Meg Syquest Drive
- RasterOps Correct Print 300, 36 Megs RAM
- Decks: Panasonic 7750, two AG 1960's
- Amilink ci edit controller with Selectra VuPort™
- Wacom 6x9 Pressure Sensitive Tablet
- Color Scanner

Grand Opening Special
1st hour free
(on all rentals of 2 or more hours)

Pricing

- **Hourly Machine Rental Rates**
  $10 Mac Classic
  $18 Mac IIci (includes scanner)
  $12 Amiga 3000/25 MHz
  $15 Video Toaster Workstation
  $20 Video Toaster Workstation with TBC's, A/B Roll AmiLink ci
- **Single Frame Animation**
  Call for details
- **Mac - Video Toaster link to video**
  $30
- **A/B roll S-VHS production & editing suite**
  (with our operator only)
  Pricing by the job
  Call Showcase Media Systems at (415) 563-5448
- **Printing**
  $0.40 LaserWriter
  $15 RasterOps Correct Print 300 Color

Close Out Sale!

Bring this coupon or your body to Computer Showcase to get amazing blow-out discounts off all remaining Amiga software and hardware not related to MultiMedia, video or 3D... Save on all games, joysticks, hard disks, educational, productivity and utility software.

Photoshop's support for the Wacom tablet has been expanded. EPS files can be opened and converted to bit-mapped files at any resolution, with anti-aliasing and font and color information preserved. PICS files can be imported as discrete PICT files, although no PICS export option is provided.

THIRD-PARTY ENHANCEMENTS

One of the most intriguing aspects of Photoshop is its open-ended nature. Since it can accept plugins to expand its capabilities, a host of third-party products have come to market.

Some, such as PicturePress from Storm Technology and ImpressIt from Radius, offer alternatives to Adobe's JPEG technology. Others are provided by scanner manufacturers to allow direct acquisition of scanned images without the use of a standalone application. Several video capture boards also come with plugins that provide direct video capture within Photoshop. Perhaps the most interesting set of plugins is the third-party filters.

Photoshop filters are special effects engines that blur, sharpen, distort, texture, or otherwise modify an image. Photoshop comes with over two dozen filters: the blur filters soften an image, the distort filters alter an image geometrically, the noise filters add or remove random pixels, the sharpen filters improve the apparent focus of an image, the stylize filters produce painter-like or impressionistic effects, and the special purpose filters correct video images and let you create your own filters.

There are several filters available from third parties as well. The simplest are similar to those provided with Photoshop itself. Performance Learning Systems offers a set of eight filters, the RazzaMaTazz Filters, which can be used to create design patterns and textures from blends and fills, or to produce effects on scanned images. I found this filter set to be subtle in some of its effects and dramatic in others. It was most effective in creating patterns, but it took some time for me to understand how to use it effectively, and in some cases it would have been much faster and simpler to use a paint program.

The Andromeda Photography Series is a set of filters that simulate the effects of filters used in photography. There are ten filters in the set; it was the first product I saw that offered a thumbnail preview of the filter effect. Also, most of the filters have parameters that can be changed in the preview window via sliders and/or numeric entries. These allow for a tremendous amount of experimentation in a short period of time. I found the Rainbow, Reflection, Star, and Velocity filters the most useful, but the Halo and Designs filters were also interesting. If you've any background in photography or are interested in adding photo effects to your work this set is a must-have.

Photoshop plugins are so useful that when Aldus shipped Gallery Effects Volume 1: Classic Art, they provided filters not only as plugins for Photoshop but for Digital Darkroom, HyperCard, and SuperPaint, and supplied both an application and a desk accessory that can also use them. This set of filters offers a preview mode and parameters that can be selected to alter the filter effects.

The sixteen filters in the Aldus set are remarkable; they offer some of the most dramatic and beautiful effects I've seen. They simulate classic painting and illustration techniques, such as charcoal drawing, fresco painting, watercolor, and pen and ink. This filter set, combined with a scanner, can keep you busy for hours. In addition, another application is provided that can apply these filter effects to every frame of a PICS file or to a set of PICT files in a batch mode.

ONWARD WITH PHOTOSHOP

Photoshop can be a Pandora's box; once you open it, more and more stuff just keeps coming out. It can easily take months if not years to master all the features.

While the manual and tutorial guide provide excellent guidance, you may want to look at *The Official Adobe Photoshop Handbook* from Bantam Computer Books. It discusses features and capabilities that are not covered in the manuals, and explains in detail how to use many of the features that are only described but not explained in the manuals. ■

RESOURCES:

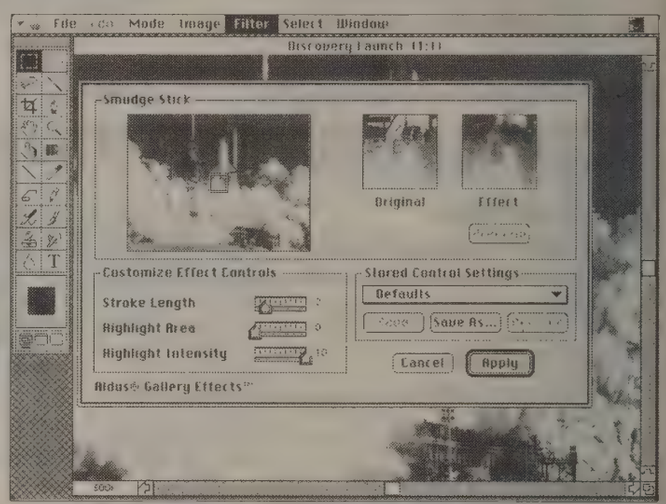
Photoshop
Adobe Systems
1585 Charleston Rd.
PO Box 7900
Mountain View, CA
94039
(415)961-4400

RazzaMaTazz Filters
Performance Learning Systems
1000 Vermont Ave.
NW, Suite 1000
Washington, DC 20005
(202)408-5018

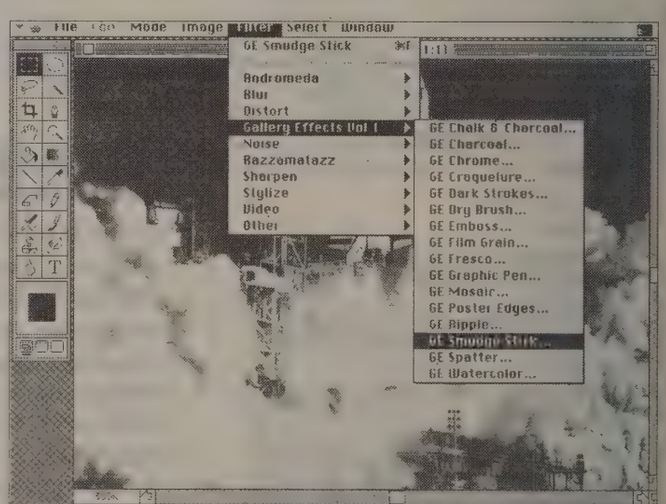
Photography Series
Andromeda Software
849 Old Farm Rd.
Thousand Oaks, CA
91360
(805)379-4109

Gallery Effects
Aldus
411 First Ave. South
Seattle, WA 98104
(206)622-5500

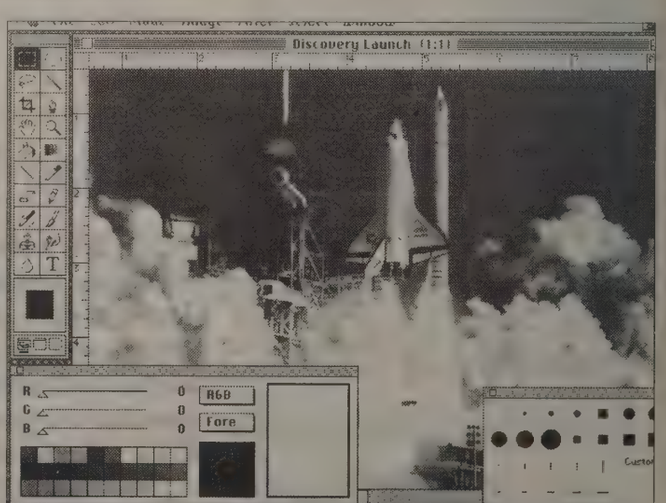
The Official Adobe Photoshop Handbook
Bantam Books, Inc.
666 Fifth Ave.
New York, NY 10103
(212)765-6500



The Gallery Effects Smudge Stick filter interface



The Filter menu



The basic Photoshop interface with the Palette and Brushes windows open

BEST PRICE IN TOWN

15 MONTHS WARRANTY . ZERO DEFECTS

TOSHIBA CRT
15", MONITOR
1280 X 1024, .28",
NON-INTERLACE

$579

MONTHLY SPECIALS:

486-50 MHz ISA/64K CACHE SYSTEM	386-33 MHz ISA/64K CACHE SYSTEM
Basic Configuration*, 200MB HDD, 14" SVGA Monitor w/ card **$1,999**	Basic Configuration*, 120 MB HDD, 14" SVGA Monitor w/ card **$1,150**

*Basic Configuration:1MB, 1.2MB Floppy, 2S1P1G port, 101 Keyboard, Motherboard w/CPU, Real Clock, Baby AT Case w/200 Watt Power (Call for other systems special price)

BASIC SYSTEM CONFIGURATION AND PRICE:

SYSTEM	PRICE	AMBER/12" W/CARD	SVGA W/CARD
486-33/EISA	$1,500	$1,600	$1,800
486-50/ISA	1099	1,199	1,399
486-33/ISA	729	829	1,029
486-SX/20	650	750	950
386-40/64K	459	559	759
386-33/64K	429	529	729
386-25/DX	399	499	699
386-SX/16	339	439	639
286-12	249	349	549

HARD DRIVES/NOTEBOOK/ACCESSORIES:

40 MB.....$199
80 MB/100 MB.....284/324
124/200 MB.....384/599
338/676 ESDI.....950/1270
TOSHIBA, 1024X768, .28.....289
WINDOWS & MOUSE.....69
COLORADO 120 MB/250 MB TAPE BACK UP.....205/275
MODEM, FAX/MODEM.....BEST
NOTEBOOK COMPUTER: 2MB/VGA, 32 GREY LEVEL/60MB HDD, SERIAL, PARALLEL, EXT. VGA PORT, DOS 5.0.....1699
MICRONICS MOTHERBOARDS/SYSTEMS.....BEST PRICE
ORCHID TECHNOLOGY/FAHRENHEIT 1280 W/1MB.....295
ATI WONDER XL W/1MB, MOUSE.....219
ETHERNET CARD, LANTASTIC STARATERR KIT.....CALL
NOVELL NETWARE/ AND/OR INSTALLATION AVAILABLE.....BEST
PANASONIC 1180/1123/1124i.....155/199/285
HPIIP+/IIL.....775/1475

BUSH COMPUTERS, USA

3685 ENOCHS STREET
SANTA CLARA, CA 95051 FAX:(408)773-8410

(408) 773-9900

Hours: M-F 9:30-5:30; Sat.(By Appointment)
* VISA or MASTER CARD acceptable
* Student financial program available
* Prices subject to change w/o notice
* 1/2 mile south of FRY's Electronics at Sunnyvale

GOVERNMENT & CORPORATE ORDERS WELCOME

MEMORY UPGRADES

LARGEST SELECTION OF MEMORY FOR ANY LASER PRINTERS, LAPTOPS,NOTEBOOKS, DESKTOP,WORKSTATIONS ...

LOWEST PRICE IN TOWN

We will meet or beat any advertised price

LASER PRINTER MEMORY

HP LaserJet IIP,IIP+,III,IIID,IIIP
HP LaserJet II,IID
HP Laserjet IIISi
HP LaserJet Fax
HP DeskJet 500
Canon LBP-4
Canon LBP-8II/8IIR/8IIT
Canon LBP-8III
Panasonic KX-4420/4450i
Panasonic KX-4450,4455
Panasonic KX-4410/4430
Okidata Okilaser 400
Okidata Okilaser 800/820
Okidata Okilaser 830/840
IBM 4019/4019E
IBM / Lexmark 4029
Epson EPL-6000
Epson EPL-7000
TI Microlaser/PS,
Sharp 9500PS
QMS-PS 410
QMS-815/825
Brother HL-4
Brother HL-8E/8D/8V
NEC Silent Writer 2-90/290
Star Micronics -4
Mann. Tally MT904
Apple II NTX
Konica 3110, Kyocera ,...

Any Laser Printer Memory

COMPAQ MEMORY

		EQU. P/N	
LTE/286	1MB	117081-001	$79
	2MB	117081-002	119
LTE386e/20	1MB	121125-001	139
	4MB	121125-002	345
SLT/286	1MB	110235-001	139
	4MB	110237-001	425
SLT386e/20	1MB	118303-001	99
	2MB	118304-001	149
	4MB	118305-001	265
DeskPro 386N, 386S/20	2MB	118689-001	139
DeskPr 386/20e ,/20, /25e	1MB	113131-001	95
	4MB	113132-001	239
DeskPro 486/25	2MB	115144-001	129

COMPUTER MEMORY

SIMM: 256X9 -80	$11
1MX9 -70	$37
4MX9 -70	139

We also carry : APPLE,,EPSON, NEC,ZENITH, SUN MICRO,AST, TI,SHARP, TOSHIBA, EVEREX, MICRONICS, ALL MEMORY ICc, SIMM,SIPP,8x8,16x4,32x8 SRAM ... CALL

NOTEBOOK/LAPTOP MEMORY

Panasonic CF-170/270/370	1MB	$99
	2MB	149
	4MB	279
TI Travelmate 2000	1MB	109
3000	2MB	163
Sharp PC-6220	1MB	109
AST Executive Notebook	1MB	94
	4MB	208
Everex Tempo LX	2MB	132
Sanyo 17NB	2MB	132
Zeos 386sx Notebook	2MB	132
Epson NBS3	1MB	139
	4MB	303
IBM L40sx	2MB	129
	4MB	229
	8MB	439
Tandon Notebook	1MB	132
	4MB	457
Altima Notebook LSX	1MB	95
	2MB	165
	4MB	292
HP 95LX,Poqet,Grid	512K	209
	1MB	355
Apple Powerbook 140/170	2MB	179
	4MB	315
	8MB	435

IBM PS/2 MEMORY

		EQU. P/N	
PS/2 30	2MB	30F5360	$119
PS/2 50Z,55SX,65,70	1MB	6450603	65
	2MB	6450604	119
	4MB	34F2933	229
PS/2 70-21,A61,B21	2MB	6450608	129
PS/2 80-041	1MB	6450375	109
PS/2 80-111,121,311	2MB	6450379	155
PS/2 80-A21,A31,A61	4MB	6451060	289
PS/2 95,90,P75	2MB	6450902	129
	4MB	6450128	239
	8MB	6450129	469
PS/2 8MB EXP BRD 50,50Z,60,65SX	0MB	6450609	175
PS/2 16MB EXP BRD for all 70s & 80s	2MB	34F30XX	329
	4MB		439

TOSHIBA MEMORY

T1000 SE/XE/LE	1MB	$99
T2000/SX/S/e	2MB	155
T2200SX	4MB	325
	8MB	625
T1200XE	2MB	119
T3100SX	2MB	119
	4MB	215
T3200SX	2MB	119
	4MB	219
T4400SX	2MB	240
	4MB	439
T5100	2MB	119
T5200,T5200C	2MB	125
T8500	8MB	425

TERMS AND CONDITIONS

1. Full five years warranty with memory upgrades
2. Government,Universities,and Qulified firms PO accepted
3. Some prices may reflect cash discounts.
4. There is a 15% restocking charge for all refused goods.
5. Price subject to change without notice.
6.We are not responsible for typographical errors.

SPECIAL OF THE MONTH

		NEW!!!	NEW!!!
HP III, 2MB	$108	Panasonic 4410/4430 ,2MB	$199
HP II, 2MB	$115	Apple Powerbk 140/170, 6MB	$435
OKI 400 ,2MB	$125	Toshiba T4400sx , 4MB	$439

QUANTITY PRICING FOR DEALER , VAR, SCHOOL, CORP, & GOVERNMENT ... CALL NOW

ATP Electronics

1095 E. Duane Ave. Ste 106, Sunnyvale CA 94086 Fax: 408-732-9672
(corner of Lawrence Expway & E. Duane,right next to 101 Freeway)

VISA

408-732-7093

Bugs In The Air

Springtime At BMUG

BY DAVID MORGENSTERN

Ah, spring at BMUG. Everything's in the air: frisbees, baseballs, pollen, and bugs—especially the bug reports. Even more disappointing, my expansive rhapsodic musings on computer paradox are being tempered to make room for virus reports. Is this your lucky day, or what?

THE PARADOX OF RELIABILITY

A paradox is a seemingly self-contradictory statement that still manages to express a truth. There are plenty of them to be found in the world of computing. You will share my paradox fixation in future *Paradoxes in Everyday Computing.*

The Paradox of Reliability: The more reliable the computer, the less it can be relied upon.

How can this be? Computer hardware and software are constantly being upgraded and improved. They are stuffed with super-fast memory and storage, produced to exacting quality standards. The technologist true believers point to their desktop idols as proof of progress. Unfortunately, reliability must be measured through the everyday use of a machine, not some laboratory benchmark.

BMUG

Computers are inherently unreliable. They are the most complicated inventions ever created by humankind. Even worse, the computer is not a static entity, it is a constantly changing dialectic system. Our data blasts around like speeding bumpercars on a global-sized freeway system, shrunk down to the size of a postage stamp.

The more we use our computers, the more we become susceptible to their failure. If you spend your time playing games, an occasional bomb is just a nuisance. But when we rely on the results of our computations, insisting on accuracy and stability to get a job done, we're in trouble. Although the software and hardware may have improved, our vulnerability to bombs and crashes has increased!

Users must realize that it's impossible to create the "perfect" machine that will never crash. The crash is a part of living with computers. Both biological and silicon systems suffer from hiccoughs.

Copyright © 1992 by David Morgenstern. All rights reserved. *David Morgenstern believes that computers and BMUG can cultivate a positive change in the world. He volunteers time at BMUG, when he's not working his "regular job," writing, or prowling around the BMUG Bulletin Board. He can be reached through the BMUG office, AOL: daviD eM, CIS: 72030,1607, and Internet: davidm@sfsuvax1.sfsu.edu.*

SEMI SOLID SEVEN

The Paradox of Reliability is evident in the Macintosh community's reaction to some problems with System 7. Some users are calling the new software a curse. They're having compatibility problems with their old software, getting the feeling that they're crashing more and enjoying it less.

System 7 is great, and adds loads of functionality to the base software package users receive when they fork over the dough. I miss its features when I work on non-seven-ized machines. But will it crash? Get real! There's no conspiracy of silence around new system software introductions.

But the BMUG HelpLine began hearing stories that seemed to point to something more than the run-of-the-mill operating system anomaly. It looked like a juicy bug!

Users would report that application, document, and folder icons would disappear from their parent folders. Even when the view is changed from Icon to Name or Date, the missing files would not reappear.

Strangely, if the sufferers would try a Find for the file name, the file would be found, and temporarily become visible in its former location on the desktop. While the file was visible, it could be opened, executed, and copied. But if the parent folder was closed and then reopened, the file was found to be missing yet again.

There were other permutations of folder and file problems, with loads of error messages and an occasional crash. A serious situation, with no word from the manufacturer. What is going on here?

DESKTOP MISMANAGEMENT

A problem of pre-System 7 Macs revolves around limitations of the Desktop file. This is an invisible file that hides on your disks. It remembers every icon it's ever seen, type and ID numbers of applications, and the folder IDs of applications. All this information requires a number of bytes for each item remembered. On a big hard disk drive, or CD-ROM, this adds up quickly.

Unfortunately, the Desktop file has a limit of 288K. The closer you get to the 288K limit, the more trouble your Mac has in keeping track of what's what on the disk. If you hit 288K—Crash! The solution was in an AppleShare file server utility called Desktop Manager. The functionality of this software was folded into System 7.

The new System 7 Finder creates two invisible data files to track all the files, folders, aliases, icons, and other goodies. One is called Desktop DB (database) and the other Desktop DF (datafile).

The information is stored in a special data structure called a B-Tree (my father says it's really a B-Tree Plus), which is a big list with branches. If you see a picture of one of these trees in a book, you'll find that they grow from the ceiling down to the ground, more like a genealogical family tree. The catalog file keeps track of what files are in which folders. The files don't really exist in a hierarchy, like a physi-

UPCOMING EVENTS:

April 9	Sorry, No Meeting. PSL Hall unavailable.
April 16	Vividus Corporation—Cinemation, Radiant Enterprises—Common Sense (control nodes).
April 23	CompuCom—new V.32bis modems, Vision Software—CameraMan.
April 27	BMUG West at Exploratorium museum in San Francisco. ARK—WorkSpace, MicroMac Technology—upgrades.
April 30	Quark—Quark XPress, Graphic Simulations—Hellcats.
May 7	Acius—4D-Server, T/Maker—WriteNow 3.0.
May 14	Finals. Sorry, No Meeting!

Call Betsy Kennedy at the BMUG office about our new Windows Special Interest Group and Windows Newsletter! The BMUG Announcement Line has the latest information on BMUG activities. (510)849-9114.

MULTIMEDIA

COME IN AND TEST DRIVE THE NEW MPC WINDOWS 3.1

486-50MHz

- 120 Megabyte HD
- 4 Megabyte RAM
- KEYTRONICS 101 Keyboard
- 1:1 Hard Floppy Controller
- AT CASE w/Power Supply
- 2 Serial/1 Parrallel Card
- TEAC 1.2 and 1.4 Floppy Drive
- 14" SVGA Monitor .28 Dot Pitch
- SVGA Video Controller 1 MB

$1995

486-33MHz

- 120 Megabyte HD
- 4 Megabyte RAM
- KEYTRONICS 101 Keyboard
- 1:1 Hard Floppy Controller
- AT CASE w/Power Supply
- 2 Serial/1 Parrallel Card
- TEAC 1.2 and 1.4 Floppy Drive
- 14" SVGA Monitor .28 Dot Pitch
- SVGA Video Controller 1 MB

$1695

386-33MHz

- 120 Megabyte HD
- 4 Megabyte RAM
- KEYTRONICS 101 Keyboard
- 1:1 Hard Floppy Controller
- AT CASE w/Power Supply
- 2 Serial/1 Parrallel Card
- TEAC 1.2 and 1.4 Floppy Drive
- 14" SVGA Monitor .28 Dot Pitch
- SVGA Video Controller 1 MB

$1395

Windows 3.1 $99.

ONE YEAR PARTS WARRANTY TWO YEARS LABOR

CUSTOM CONFIGURATIONS
FULL TECHNICAL SUPPORT

#1 IN CUSTOMER SATISFACTION

Alltek Computer

359 W. El Camino Real, Mt. View, CA 94040

COMPLETE COMPUTER SALES,
REPAIR AND SERVICE CENTER

Call Tim Gillies
(415) 969-8984
M-F 10-6:00
Sat. 10-4:00

VISA MasterCard

OVER 2,000 CUSTOM SYSTEMS SOLD SINCE 1989. Prices subject to change without notice.

Great Service, Great People, Great Prices!

HURRY NOW QUANTITIES ARE LIMITED!

MICRONICS 486-33 EISA
213MB Super VGA
$3,265

- 4MB RAM expandable to 64MB onboard
- 64K Cache expandable to 256K Cache
- 213MB 15ms SCSI HARD DRIVE
- 14" Super VGA color monitor (Non-Interlaced1024x768) .28 dp
- 1MB 16bit VGA (1024x768) card
- 32 Bit EISA SCSI (64K Cache) controller
- 1.2MB and 1.44MB floppy drives
- 8 Expansion slots
- I/O 2 Serial, 1 Parallel, 1 Game Ports
- 101 Enhanced keyboard
- Built-in math coprocessor
- Weitek coprocessor socket
- Clock/calendar w/battery backup
- Supports MS-DOS, UNIX, & NOVELL software
- MS DOS 5.0 & MS Windows 3.0
- Vertical case with power supply

ECI 486DX/50MHz
256K Cache
213MB Super VGA System
ISA $2,495

ECI 486DX/33MHz
256K Cache
213MB Super VGA System
ISA $2,189

- 8K Internal, 256K external cache
- 4MB RAM expandable to 32MB onboard
- 213MB 15ms IDE HARD DRIVE
- 14" Super VGA color monitor (Non-Interlaced1024x768) .28 dp
- 1MB 16bit VGA (1024x768) card
- 1:1 Interleaved 2HD/FD controller
- 1.2MB and 1.44MB floppy drives
- 8 Expansion slots
- 2 Serial, 1 Parallel, 1 Game Ports
- 101 Enhanced keyboard
- Built-in math coprocessor
- Weitek coprocessor socket
- Clock/calendar w/battery backup
- Vertical case with power supply
- MS DOS 5.0 & MS Windows 3.0

SPECIAL 19200 BAUD INT. FAX/MODEM INCLUDED

ECI 386/33MHz 64K Cache
120MB Super VGA System
$1,425

ECI 386/40MHz 64K Cache
120MB Super VGA System
$1,439

SALE

- 64K cache on board
- 1MB RAM expandable to 32MB on board
- 120MB 19ms IDE HARD DRIVE
- 14"Super VGA color monitor (1024x768) .28dp
- 1MB 16bit VGA (1024x768) card
- 1:1 Interleaved 2HD/FD controller
- 1.2MB and 1.44MB floppy drive
- 8 Expansion slots
- 2 Serial, 1 Parallel, 1 Game Ports
- 101 Enhanced keyboard
- Weitek coprocessor socket
- Clock/calendar w/battery backup
- Includes shadow ram for fast bios access
- Mini Vertical case with 200W power supply
- 3 Button High-Resolution mouse
- MS DOS 5.0 & MS Windows 3.0

SPECIAL 19200 BAUD INT. FAX/MODEM INCLUDED

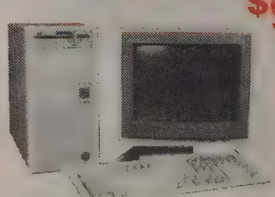
SPECIAL ON SALE

ECI 386-25MHz
85MB VGA System
$1,129

- 1MB RAM expandable to 32MB
- 85MB 18ms HARD DRIVE
- 14" Super VGA color monitor (1024x768).28dp
- 512K 16bit VGA (1024x768) card
- Intel 80386-25MHz CPU & AMI bios
- Math coprocessor socket
- 1x32, 6x16, 1x8 bit slots
- 1.2MB and 1.44MB floppy drive
- 1:1 interleaved HD/FD controller
- 2 Serial, 1 Parallel, 1 Game Ports
- Clock/calendar w/battery backup
- 101 Enhanced keyboard
- Mini Vertical case with 200W power supply
- 3 Button High-Resolution mouse

ECI 386SX/16MHz
40MB Super VGA System
$949

SPECIAL ON SALE



386SX-25
85 MB Super VGA System
$1,049

- 14" Super VGA color monitor (1024x768) .28dp
- 512K 16bit VGA (1024x768) card
- 1MB RAM expandable to 8MB
- Math coprocessor socket
- 6x16, and 2x8 bit slots
- 1.2MB or 1.44MB floppy drive
- 1:1 interleaved HD/FD controller
- 40MB 28ms HD w/386SX-16- 85MB 18ms HD, w/386SX-20
- 2 Serial, 1 Parallel, 1 Game Ports
- Clock/calendar w/battery backup
- 101 Enhanced keyboard
- Mini Vertical case with 200W power supply
- 3 Button Mouse
- MS DOS 5.0

HARD DISKS

MAXTOR

80MB 18ms IDE 7080A	$285
130MB 15ms IDE 7120A	369
213MB 15ms IDE LXT-213	559
340MB 13ms IDE LXT-340	969
360MB 13ms SCSI/ESDI XT-8380	1075/1095
768MB 16ms SCSI/ESDI XT-8760	1450/1450

CONNER

40MB 28ms IDE 3000	$CALL
120MB 19ms IDE 30104	375
213MB 17ms IDE 3204F	559

WESTERN DIGITAL

85MB 18ms IDE	$279
120MB 18ms IDE	355
200MB 17ms IDE	549

NEC

105MB 18ms IDE D3756 3 1/2"	$315
150MB 18ms ESDI D5655 5 1/4"	575

SEAGATE

40MB 28ms IDE ST351A	$229
40MB 28ms MFM ST-251-1	229

SOUND BLASTER

11-voice FM music
Digitized voice input/output
Decompression hardware
Joystick port
MIDI Interface

$119

SOUND BLASTER Pro

CD-Quality stereo sound
CD-ROM interface
16-bit Card
Bundled software

$199

LANTASTIC NETWORKING

We offer custom design service. Installation and maintenance & Extended software support

Lantastic 10 Based T starter kit	$599
Lantastic 2Mbps Adapter kit	159
Lantastic 2Mbps Starter kit	375
Lantastic AI Lan Bios	89
Lantastic Artscribe Dictation starter kit	525
Lantastic Artscribe Dictation station	99
Lantastic Ethernet adapter kit	229
Lantastic Ethernet starter kit	495
Lantastic for Windows (software only)	199
Lantastic Harmonica	23
Lantastic Hub	385
Lantastic Hub installation kit	168
Lantastic Network Eye	195
Lantastic Sounding board (voice)	99
Lantastic Z station	99

ALL SYSTEMS COME WITH 2 YEAR LABOR 1 YEAR PARTS WARRANTY

Complete Computer Repair Service and System Upgrading.

Our Service Staff is trained to handle all jobs, large or small. We repair all makes and models.

COMPUTER INTERNATIONAL, INC.
2780 Ryan Road #C Richmond, CA 94804

EVERGREEN (510) 526-8667 FAX (510) 526-1447

Serving You for Over 6 Years!

Notebooks Scanners Monitors

TOSHIBA T2200SX/40
State-of-the-Art Notebook

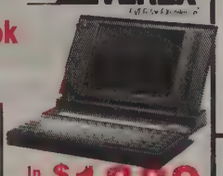
- Only 5.5 pounds
- 386SX-20 processor
- 40MB or 60MB hard drive
- 2MB RAM exp. to 10MB
- VGA display with 16 gray scales

$3199

AST NOTEBOOKS

- Premium Exec 386SX-20/40MB $2099
- Premium Exec 386SX-20/60MB $2388
- Premium Exec 386SX-25/60MB $2699
- Premium Exec 386SX-25/80MB $2888

TEMPO LX EVEREX
386SX-20MHz Notebook
60MB Hard Disk



EVEREX
Pocket Fax/Modem
$299

In stock **$1889**

- Backlit VGA display • 1MB exp. to 5MB • 3.5" Floppy Drive • MS-DOS 5.0
- Windows 3.0 • Everex Mouse • Carrying Case • Weighs 7lbs w/battery

VANDA 386SX NOTEBOOK

- 386SX-20 (Intel processor)
- 2MB standard expandable to 4MB
- VGA Display with 32 grey scales
- 40MB Hard Drive • 1.44MB Floppy Drive
- 2 Serial, 1 Parallel ports
- NiCAD battery with AC adapter included
- Weight 6.2 lbs. • Deluxe Carrying Case
- FCC Class B Approved

$1549

Options:
- 2400 Baud Internal Modem Card $145
- 2MB Upgrade 175
- Extra NiCAD Battery 70

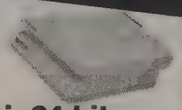
INTERFACE CARDS

AT I/O card 2S/1P/G	$20
Mono graphic/printer	20
Color graphic/printer	35
XT high density floppy cont	35
XT hard disk cont	49
EGA 600x800 card	79
SpeedSTAR 1024x768 w/1MB	169
SpeedSTAR plus 1024x768 w/1MB	219
Serial/printer/game card	16/16/16
MFM 1:1 HD/FD cont	68
IDE dual HD/FD cont	25
SCSI 1:1 HD/FD cont	159
ESDI 1:1 HD/FD cont ultrastore w/32K	179
RLL 1:1 HD/FD cont	79
Tseng Lab 1MB (1024x768)	109
Trident 1MB (1024x768)/512K	109/79
IDE w/IO 600x800 VGA card	95

UPS SYSTEMS
American Power Conversion

Output	Transfer Time	Miscellaneous	Special
250VA	1-3ms	Rated for 386SX 286XT/AT Int. hardware	$149
400VA	1-3ms	Rated for desktops 386/486,286 servers	$209
450VA	1-3ms	Rated for tower 386, 486 systems	$269
600VA	1-3ms	Rated for heavily configured or CAD/CAM systems	$349

TAMARACK
Professional Flatbed Color Scanner 600dpi, 24 bit
Optional SKT Slide Scanner



ArtiScan™ from Tamarack gives you state-of-the-art resolution and impeccable image quality. 600 dpi (true vertical & horizontal), 24 bit per pixel (16 million colors and 256 gray levels). Supports both the PC and the Macintosh. SCSI interface for fast operation. Hardware Gamma correction for accurate image enhancement. Complete with SCSI Interface and PhotoStyler full ver. 1.1 (for the PC) and with Adobe PhotoShop full ver 2.0 (for the Mac). Optional Slide Scanner to scan A4 size x-rays, slides, etc. One year warranty. Top Rated Scanner- **MacUser Magazine, Dec. 1991**

- ArtiScan 6000C $1345
- ArtiScan SKT 695

Call for 3000C or 8000C

TAPE BACKUPS
SAVE YOUR DATA!

COLORADO MEMORY SYSTEMS INC.
JUMBO + Tape Backup

- Colorado 120 MB DJ-10 ..... $219
- External kit, KE-9 + AB-11 119
- Colorado 250 MB, DJ-20 269

Future Domain
New Product
SCSI DOS KIT $309
16-Bit AT SCSI-2 Fast SCSI adapter with (4) floppy support

MOTHERBOARD SPECIALS

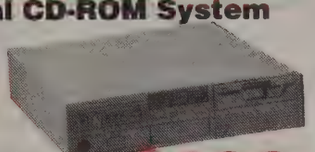
	NO CPU	OK WITH CPU
386SX-16		$165
386SX-20/25		210/225
386-25	$110	230
386-33/64K	170	315
386-40/64K	179	335
486-33/128K	225	675
486-33/256K	269	715

MICRONICS

486-33 GEMINI ISA	910
486-33 FULL EISA	1385
386-33 GEMINI	585

SONY LASER LIBRARY
External CD-ROM System

NEW



- 640MB Storage
- Large Software Collection
- 6 Educational Software Packages
- 1 Year Limited Warranty

$489

LOGITECH SCANNERS

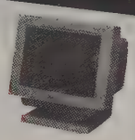
LOGITECH
ScanMan Model 256 & Ansel ™
Hand-Held Scanner

- Serial Mouseman 400dpi $69
- Bus Mouseman 400dpi 69
- Cordless Mouseman 400dpi 109
- Serial TRACKMAN 320dpi 69
- Bus TRACKMAN 320dpi 79
- First Mice 39

$259

ScanMan 32 **$139**
ScanMan 256 WITH OCR **$299**

20" Screen
MITSUBISHI ELECTRONICS



- Mitsubishi 20" VGA+ analog monitoR
- .31 mm dot pitch
- 1280x1024 maximum resolution (non-interlaced)
- 30-64KHz horizontal scanning frequency, 50-90Hz vertical
- Non-glare screen
- Mac II compatible
- Tilt and swivel base

$1849

Hitachi 19"
- 1280x1024 VGA analog monitor
- 19" screen, .31 dot pitch, #CM2085M

$1749

BUNDLE DEAL AMAZING PRICE
ORCHID
FAHRENHEIT
1280 WITH 1MB VRAM

- 1280x1024, 16 colors
- 1024x768, 256 colors
- 640x480 up to 32,000 colors
- 72Hz Non-Interlaced
- 132 Column Text Mode
- Windows Accelerator
- 112 times faster than standard VGA

$CALL

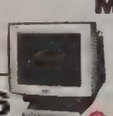
ViewSonic™ MONITORS

1	14"	.39dp, 640x480	$249
4E	14"	.28dp, 1024x768	$329
5E	14"	Non-Interlaced .28dp	$449
6	14"	Non-Interlaced .28dp	$389
7	17"	.28dp, 1280x1024	$1199
8	20"	1280x1024 .31dp	$1699

SONY
IBM & MAC Compatible!
NEW
14" 1304
$559

- 1024x768 resolution • .25 dot pitch
- 14" Trinitron tube
- Built-in tilt/swivel base

17" CPD-1604S
Monitor!



20" GDM1936
$2499

- 1280x1024 resolution • .30 dot pitch
- 20" Trinitron tube • Built-in tilt/swivel base

$1089

- Up to 1024x768
- .25 mm dot pitch
- 17" Trinitron VGA
- 30-57 kHz scan frequency
- Analog RGB input

NEC

NEW! •Non-Interlaced •28mm Dot Pitch •Reduced Magnetic Field TM

$633
15" 3FGX
•1024x768 •65MHz Bandwidth

$788
15" 4FG
•1024x768 .28dp •Non-Interlaced •75MHz Bandwidth •AccuColor control •Digital controls

$1399
17" 5FG
•1280x1024 •135MHz Bandwidth •AccuColor control •Digital controls

$2899
21" 6FG
•1280x1024 •135MHz Bandwidth •AccuColor control •Digital controls

BUNDLE DEAL AMAZING PRICE WITH ANY ABOVE MONITOR
ORCHID ProDesigner IIs
ORCHID

- High Resolution
- 1024x768 VGA Adapter w/1 MB

$CALL

HOURS: MON-FRI 8-6 SAT 10-5
Prices subject to change w/o notice
No responsible for typographical errors
Prices based on cash price

VISA MasterCard

EVERGREEN COMPUTERS INT. (510) 526-8667

Name Brand Quality, $1 Million In Inventory

1000's of products to choose from

PRINTERS

• Color Option Only $69

CITIZEN

GSX-145 $359
132 column printer

GSX-200GX
• 9 pin 213 cps
• 40 cps NLR
• Color Option Only $49
$159

NEW **Color Option Only $49**

GSX-140PLUS $289
• 220 cps, 72 cps LQ

GSX-130 $229
• 180 cps, 60 cps LQ

PN48 Notebook Printer™
World's Smallest & Lightest (Under 2.5 lbs complete) Printer w/Battery& Carrying Case
NEW
$349

Panasonic Office Automation

• 2 year warranty
• 192cps, 63cps LQ
• 5 built-in LQ fonts
$199 KX-P1123

KX-P1124i 24-pin 300cps $279
KX-P1624 24-pin 192cps 359
KX-P2624 24-pin 300cps 389

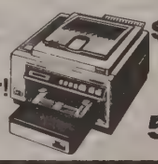
KX-P2123
Quiet 24-pin Color Capable
43.5 dBA!
$239

Includes Adobe Type Manager!
•Up to 240cps draft, 64cps LQ
•6 built-in fonts
•Paper parking •240x216 dpi
•Color option available
•2-year limited warranty
Color Option $45

KX-P2180
Quiet 24-pin Color Capable
$189

•Up to 240cps draft, 38cps NLQ
•6 built-in fonts
•Paper parking •240x216 dpi
•Color option available
•2-year limited warranty **45 dBA!**
Color Option $45

KX-P4410
Laser Printer
Includes Adobe Type Manager!
•512K RAM exp. to 4.5MB
•250 sheet paper capacity
•300 dpi resolution •5 PPM



$669
5ppm!

KX-P4455
PostScript Laser
•2MB RAM exp to 4MB
•500 sheet paper capacity
•39 PostScript fonts •11PPM
$1695
KX-P4450i $1069

LASER ACCESSORIES	4420	4450i/4455
Toner	$39	$39
Legal Tray	49	49
Envelope Tray	69	69
Developer	89	99
Drum Unit	119	149

Laser Printer MEMORY!!

	1MB	2MB	3MB	4MB
HPII/IID	$100	$150	$200	$250
HPIIP/III/IIID/IIIP	90	140	190	240
Panasonic KX-P4420	140	190	190	240
IBM 4019	140	190	240	290
Epson EPL-6000	140	190	240	290
Epson EPL-7000	N/A	90	140	N/A
Okidata 400/800	100	150	200	250
Brother HL-4	130	180	230	280

HEWLETT PACKARD Printers

DeskJet 500, 3ppm ..... $CALL
DeskJet 500 Color 699
IIP Plus, 4ppm, PCL-4 799
III, 8ppm, scalable fonts 1499
IIIP, 4ppm, scalable fonts 999
IIID, 8ppm, dual tray, PCL-5 2295
IIISi, 17ppm, auto interface switch 3499

HEWLETT PACKARD Authorized Dealer

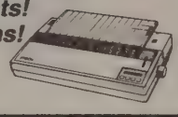
LASER TONER CARTRIDGE

#92295A II/IID/III/IIID $79
#92275A IIP/IIIP 79

EPSON® LQ-570 **$279**
• Scalable Fonts!
• 4 Paper Paths!
Fast 315cps!

LQ-870
Narrow Carriage!
• Scalable Fonts!
• 4 Paper Paths!
$459

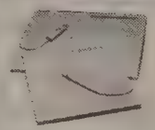
LQ-1170
Wide Carriage!
Fast 413cps!
$619



DIGITIZERS

Summagraphics

Summasketch II
12"x12" 4 Button Cursor
$339



Summasketch II
12"x18" Pro, 4 Button Cursor
$639

FELLOWES

Anti-Glare Filter
Optical quality nylon mesh anti-glare filter for 14/15" monitors.
Retail Price $59.95
$49

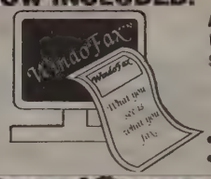
PANAMAX

POWER PROTECTION

Six (6) Outlet Surge Suppressor
6 foot power cord, master on/off switch, resettable circuit breaker,
Retail Price: $99
$69

FAX/MODEMS

perfect Datafax
Turn your PC into a Communications Center!
FAX & MODEM NOW INCLUDED!



Fax directly from any Windows™ application program
Supports Windows 3.0 or higher
$129
• 5 Year Warranty
• Made in the USA

SmartConnect 24i
2400 Baud internal modeM w/MNP-5 • 5 Year Warranty **$79**

EVEREX COMPUTER SYSTEMS DIVISION

FAX MODEM
2400 Modem/9600 Fax Int/Ext $249/299
Everex Carrier Portable 9600 Fax/2400 Modem 329

US Robotics Modems
9600 Baud/Com port 1-4
PC internal version of the CV32
$329 INT
$379 EXT
9600 Baud
Com port Serial V.32 compatible,
MNP class 1-5 dial-up & leased line applications

MAX MODEM
2496HX
2400 Modem/9600 Fax
Internal $95
2400 Baud Modem
Internal $55

LABEL PRINTER
SII Seiko Instruments
Smart Label Printer Plus for Mac
• One-at-a-time text and bar code labels
• Multiple font styles, small footprint (6"x3.5")
• FREE TouchBASE (V2.0), a $125 value
$195

PC MEMORY EXPANSION CARD
FOR 286/386/486 SYSTEMS
32MB LIM4.0 EMS CARD
• IBM PC/AT compatible
• Expandable up to 32MB memory
• Supports TDISK, PRINTSPOOL, Memory Manager, INSTALL, SEPTUP and DIAG utilities LCS-8661N

$139
1MB RAM add $45 ea.

COMPUTER INTERNATIONAL, INC.
2700 Rydin Road #C, Richmond, CA 94804

EVERGREEN (510) 526-8667 FAX (510) 526-1447

cal file cabinet; rather, the catalog "points" to its location on your disk drive. The Finder is like a squirrel running up and down the tree trunks and branches (folders) to the leaves (files), until it finds the nut it needs for lunch.

If something happens to the catalog file, and one of the tree limbs breaks, all the files below that link will be lost to the squirrel. Since the files are maintained in alphabetical order, the user might find that all the files that begin with letters after "Q" are getting lost. The System or Finder file would not be visible in the System folder, but the disk will still boot up. This is because the actual files aren't damaged, just the information that points to them.

The mysterious element in the story is the ability of the new System 7 Find command to discover the "lost" files. Find uses a new Toolbox call, PBCatSearch, to do the finding. PBCatSearch ignores the hierarchy of the catalog tree and just races along the links connecting all the files. It's like a flying squirrel that can stay high (or low on a computer tree) in the leaves, instead of running up and down. Find doesn't rely on all the hierarchical links being correct, it runs along the list of files looking for the one you want.

The common wisdom holds that most of these problems occur with files and folders *actually placed on the desktop itself.* There were changes in how files on the desktop are treated in System 7, and file dialog boxes now have a button that shoots straight to the desktop.

Here are some tips to help you avoid this particular bug in System 7—or to make the sting hurt less if it bites!

• Don't place your work on the desktop. I love littering my desktop with icons, even when I had a compact Mac. But System 7 gives us a way to safely place things where we want them by employing *aliases*! The alias points to the real file, folder, or application, and if it gets screwed up, you just make another alias.

• Since the Find function can uncover the hidden files, put a special character in the names of your most important files. This gives you the means to easily search through the files, without having to remember their names. Use the Key Caps desk accessory to check out the special characters available when pressing the Option or Shift keys.

• Rebuilding the Desktop file doesn't seem to help with this bug. A regular rebuild may result in a screwy desktop, especially if there was some existing damage. The best way is to delete the two files with a shareware utility, Desktop Reset, or commercial programs like DiskTools or Norton. This action forces the Finder to rebuild the desktop from scratch, which should result in a better job.

The word in March BMUG meetings was that Apple knows what's going on, but can't figure out how it happens. Some people think that someone discovered the answer, but the file was wiped out by the bug in question.

What Is BMUG?

BMUG is an educational, nonprofit, consumer advocacy group organized to share information and provide critical direction to users and developers in the computer community worldwide. It is an independent advocate, not affiliated with any manufacturer, delivering trustworthy information and useful products.

Like any growing organization, it is many different things to its thirteen thousand international members. BMUG supports many Special Interest Groups (SIGs), a Bulletin Board System (BBS), free HelpLine, software library, weekly meetings, publications, and much more. BMUG also puts out a semiannual 400+ page book that we call our "newsletter."

Our motto continues to be: *We're in the business of giving away information.*

Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6–9 pm (or whenever we finish), in the Physical Sciences Lecture Hall on the UC campus. BMUG West is a meeting held monthly in the Exploratorium, San Francisco's science museum.

The BMUG Office, 2055 Center St. (a half block from the BART station), is open to the public 9 am to 5 pm. Please come by and say hello, meet other members, and hang out.

The BMUG HelpLine, (510)540-1742, and our fax number, (510)849-9026, provide technical assistance and telephonic hand-holding during business hours (11 am–5 pm). If your question can't be answered on the spot, we try to get you in touch with someone who can help. Of course, not every problem can have a happy ending—but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around with hundreds of disks filled with the latest versions of public domain or shareware programs, and HyperCard stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the *TV-ROM*™, a fantastic collection of public domain QuickTime videos.

Our sixteen-line BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you were, as well as send mail to users everywhere! With our multiline capability, you can have access to BMUG almost twenty-four hours a day. It's easy to use, fun, and a great resource.

BMUG can be found on most electronic services. BMUG can also be reached through the international USENET network through bmug@garnet.berkeley.edu.

To get some further information about BMUG please write to: BMUG, 1442A Walnut St., #62, Berkeley, CA 94709. If you prefer to phone our business office call (510)549-BMUG, or fax (510)849-9026.

CMC

We Will Meet or Beat Any Advertised Price!

SIMMS

Call on SIMMS and SIPPS Not Listed

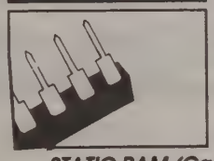
IBM

256x9-70/80	CALL
1x9-60	$38
1x9-70	36
1x9-80	35
1x9-100	32
4x9-60	134
4x9-70	124
4x9-80	122

APPLE

1x8-80	$32
1x8-100	30
2x8-80	69
4x8-80	117
Mac IIfx 4 MB	139

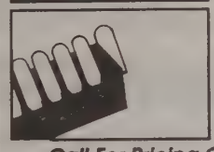
DRAMS



256x1-70	$1.25
256x1-80	1.15
256x1-10	1.10
256x4-70	4.20
256x4-80	4.10
64x4-80/100	1.35
1x4-80	20.00
1MBx1-70	4.20
1MBx1-80	3.95
1MBx1-100	3.75

STATIC RAM (Cache RAM) ..... CALL
Call For Lowest Pricing Listed!

MATH CO's



INTEL/CYRIX

287XL	$95/85
387SX-16	125/115
387SX-20	135/120
387SX-25	140
387DX-20/25	185/159
387DX-33	199/169
387DX-40	199
287-10	85
8087-2/1	95/125

Call For Pricing On IIT, AMD, & Weitek

UPGRADES

Please Call For Other Memory Upgrades On:
MAC/AST
SUN/HP/NEC
DELL/ACER
EPSON/SHARP
ALL LAPTOPS
ALL NOTEBOOKS

IBM PS/2 + PS/1
2 MB SIMMS

Mod. 70/80	$105
Mod. 30-286	109

TOSHIBA PORTABLE

T1000SE, XE, LE T2000SX, T2000 1 MB	$139
2 MB	239
T1200XE, T1600, T3100e, T3100SX, T3200SX 2 MB	169
4 MB	269
T2000SXe, T2200SX 2 MB Card	239
4 MB Card	450
8 MB Card	825

COMPAQ

1 MB	$79
2 MB	139
4 MB	199
8 MB	469
32 MB	2600

And More Expansion Boards...Call with your model number

LASER PRINTER UPGRADES

HPII, IIP, III, IIID

2 MB Board	$119
4 MB Board	185

PANASONIC

KXP4420/4450i 2 MB Board	$145
4 MB Board	199

OKI LASER 400/800

1 MB Board	$115
2 MB Board	149

MISCELLANEOUS

386/33 MB 64K w/CPU	$299
486/33 64K w/CPU	568
1.44/1.2 MB Floppy	49/57

EPSON LASER

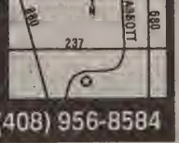
6000 2MB	$149

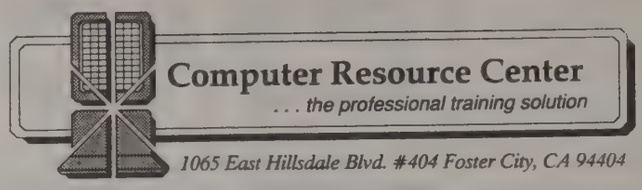
Other Printers Call!

$ Trade-In Your Old Memory$ All Parts New & Guaranteed!

Mon-Fri 9-5 Sat 10-2 P.O's accepted
Prices Subject to Change Without Notice
COD

CALIFORNIA MEMORY & COMPONENTS
356 S. Abbott Ave.
Milpitas, Ca 95035
TEL: (408) 956-8291 • Fax (408) 956-8584





Computer Resource Center has been a dedicated training facility in Foster City since 1984. We offer both PC and Macintosh classroom training and consulting. Over 75 courses in the most popular business software applications are offered each month in our modern, comfortable classroom facility. Our goal is to provide students with the opportunity to acquire quality computer training which will enable them to return to their own environments and use hardware, software, and documentation with proficiency in a minimum of time.

Why Train with Computer Resource Center

- Proven Superior Instruction - Ask for references!
- Personalized Attention in a Comfortable Setting
- Each Person Works at Their Own Computer
- Half Day & Evening Classes for Better Work Scheduling and Student Comprehension
- Free Summary Manual and Classroom Exercises Included with Each Class
- Free After Class Technical Support
- Centrally Located Just Off Hwy. 92 with Immediate Access to Hwy's 101 & 280 with Plenty of Free Parking.
- Customized Classes Available Upon Request
- Unconditional Guarantee

INTRODUCTION TO MICROSOFT EXCEL

May 6-7	Wed-Thurs	PM
May 18-19	Mon-Tue	AM

INTRODUCTION TO WORDPERFECT

May 11-12	Mon-Tue	PM
May 19-20	Tue-Wed	AM
May 26-27	Tue-Wed	PM

INTRODUCTION TO MICROSOFT WINDOWS

May 4-5	Mon-Tue	PM
May 26-27	Tue-Wed	AM

INTRODUCTION TO MAC PERSUASION

May 18-19	Mon-Tue	AM

INTRODUCTION TO MAC EXCEL

May 21-22	Thurs-Fri	PM

PARADOX, DBASE, PAGEMAKER AND MORE!!
CALL FOR A COMPLETE CLASS SCHEDULE AND DESCRIPTION CATALOG!!

PHONE (415) 573-9675
FAX (415) 573-5317

BIG BROTHER IS INFECTING YOU

The Macintosh world has been spared much of the virus agony suffered by the PC users. Our virus problems have usually been the result of poor coding, rather than malicious intent of the programmer. A virus may cause you some grief, but it's the action of the virus being a virus, instead of some awful planned destruction.

In late March, the INIT 1984 virus was discovered in the Netherlands and the US. It's a bad one.

The virus damages a large number of folders and files, which have their names changed to random one- to eight-character strings. File creators and file types are also changed to random four-character strings. This changes the icons associated with the files, and destroys the relationships between programs and their documents. The files' creation and modification dates are changed to Jan. 1, 1904. This makes it very difficult to easily recover your data with disk utility programs.

Like a number of its PC cousins, it's designed to trigger if an infected system is started on any Friday the 13th. A number of users were attacked in March 1992, but others may have been affected earlier, but thought their trouble was some "normal" hard drive problem.

The virus only infects system extensions, also known as Inits, or startup documents. It does not infect the System file, desktop files, control panel files, applications, or data files. The virus spreads from extension to extension when your Mac is booted.

Disinfectant 2.7.1, the terrific freeware antiviral program, is the updated version to deal with INIT 1984. John Norstad, the author, made some errors on the plain vanilla 2.7, so be sure to use the correct version. It's available from the BMUG office.

MORE TRICKS OF THE MACINTOSH MASTERS

The most impressive knowledge of the Macintosh is not always business-related. You can know your way around databases and spreadsheets, making yourself look great to the boss, but what about the groupies? They want the tricks!

A "trick" is something amusing or nonproductive that won't appear unless you do some action you wouldn't normally do. Some of them are bits of fun that were slipped in by the programmers, while others are unadvertised features.

• Macintosh IIci: Set the system date to 9/20/89, the release date of the IIci, set your monitor to 8-bit color, then restart while holding Command+Option+c+i. You'll see a neat color picture of the IIci design team appear. Click the mouse to continue. Remember to reset the correct date.

• Puzzle Desk Accessory 7.0: You can paste any picture into the Puzzle, and it will be sized to fit. You can also copy the picture from the Puzzle, and look at the clipboard to see what it will look like solved.

• QuickTime 1.0: Turn on Balloon Help and point to the QuickTime file. The balloon reads: "time n. A nonspatial continuum in which events occur in apparently irreversible succession from the past to the present to the future."

• Simple Player (for QuickTime) 1.0: Hold down Option as you select About Simple Player... The two movie

800-622-6885

Lowest Prices...Guaranteed

MacOutlet Welcomes SUPERMAC. Fusion Data and TECHWORKS

SPECIALS!!
DAYSTAR DIGITAL
PowerCache II, IIci, IIcx
50MHz...$1049
40MHz...$749
Factory Fresh. Daystar Three-Year Warranty

TOLL FREE LINE FOR BOTH ORDERS AND TECHNICAL SUPPORT

▼

THREE-YEAR WARRANTY ON ALL RASTEROPS SUPERMAC AND DAYSTAR

▼

BEST TECHNICAL SUPPORT AVAILABLE

▼

30 DAY MONEY BACK GUARANTEE

RasterOps

NEW !!! RasterOps PaintBoard 24 System	**$3995.**
19" RasterOps Trinitron with 24 bit accelerated video board	
NEW !!! RasterOps MediaTime	**$CALL.**
24 bit board w/ real time digital video and 16 bit digital audio.	
NEW !!! RasterOps 16" Color Monitor	**$CALL.**
RasterOps own technology. Made in USA	
NEW !!! RasterOps 24MxQ	**$CALL.**
NEW !!! RasterOps MxTV	**$CALL.**
RasterOps New 24STV Board	PRICE BREAK **$799.**
RasterOps NEW 24XLI 2075 System	**$4599.**
RasterOps 8XL 1960H System	**$2139.**
RasterOps 8L/24L 2075 System	**$3100./$3495.**
RasterOps 208	**$199.**
RasterOps 264 30/24SX	**$649.**
RasterOps NEW 21" Mono System	**$1450.**
RasterOps 19" Greyscale System	**$1299.**
RasterOps 803 Accelerator for STV	**$195.**
RasterOps Video Expander II	**$489.**
RasterOps Expresso Personal Slide Scanner	**$749.**

Daystar Digital

Universal PowerCache 40MHz	**$895.**
Universal PowerCache 40MHz w/68882	**$1049.**
Universal PowerCache 50MHz	**$1299.**
Universal PowerCache 50MHz w/68882	**$1549.**

Fusion Data Systems

TokaMac CI	**$CALL**
25 MHz 68040 PDS based Accelerator for Mac II ci.	
TokaMac SX	**$CALL**
25 MHz 68040 PDS based Accelerator for Mac II si and SE/30.	
TokaMac LC	**$CALL**
25 MHz 68040 PDS based Accelerator for Mac LC.	

NEC

NEW 4FG 15" MultiSync Monitor	**$CALL**
NEW 3FGX 15" MultiSync Monitor	**$CALL**
NEW 5FG 17" MultiSync Monitor	**$CALL**

Dove

DoveFax Desktop / DoveFax NuBus	**$249./$279.**
2400 bps data/9600 bps fax modem.	
DoveFax+ / DoveFax+ NuBus	**$329./$379.**
2400 bps data/9600 bps fax modem plus voice mail!	
DoveFax LAN	**$499.**
2400 bps data/9600 bps fax network modem.	

SuperMac

SuperMatch 19"	**$1690.**
Platinum Monitor 19"	**$990.**
Spectrum 8•24 PDQ	**$840.**
All Video Spigots	**$CALL**

E-Machines

E-Machines T-16 Trinitron	With any board purchase **$1295.**
16" monitor. Top rated three years running.	
E-Machines NEW! T-16 II/XL24 Trin. Sys.	**$2450.**
24 bit accelerated video board. Incredible Value!	
NEW! E-Machines E-16 Monitor	New Low Price **$995.**
16" color monitor for on board video. Quadra ready.	

TechWorks

NuBus 10 Base T, Ethernet Card	**$199.**
NuBus 10 T, Thin, AAUI Ethernet Card	**$269.**
GraceLAN Std. 50 User Version 2.0	**$329.**
GraceLAN Asset Manager	**$559.**

Seiko

CM1445 24 Bit Color Bundle	**$1229.**
14" RGB monitor with RasterOps 24SX 24 bit color board.	
CM1445 8 Bit Color Bundle	**$779.**
14" RGB monitor with RasterOps CB208 color board.	

MacOutlet
GRAPHICS DISPLAY SYSTEMS SPECIALISTS

800-622-6885

CALL FOR FREE CATALOG

48860 Milmont Drive #103C
Fremont, CA 94538
(510) 623-8890 Fax (510) 623-8894

frames now have grayscaled cats in them.

• ResEdit 2.x: Hold down Shift+Option+Command as you select About ResEdit... You get the chance to enter "pig mode," and the Mac makes the sound of a pig—"oink-oink-oink." When you put ResEdit into Pig Mode, resources will be compacted and purged each time ResEdit goes through its event loop, several times a second. I don't know why you'd want to do this, since this makes ResEdit slower. Perhaps it's a help to programmers that are being paid by the hour?

BYTES AND PIECES

• We've got a heavyweight addition to the list of BMUG publications—*The BMUG Guide to Bulletin Boards and Beyond.* It's by Bernard Aboba, chief sysop of the BMUG BBS, and telecommunications guru.

It has explicit instructions on how to get up to speed on bulletin board systems, using the BMUG BBS as a teaching aid. But there's plenty for every modem user in this 550-page book. There's detailed info on various international networks, Mac to PC or UNIX data exchange, the Internet, hardware—everything! It's $15 for members and $20 for nonmembers.

• If you're feeling blue because you don't have a Macworld Expo to go to on a Saturday night, then you should order the latest BMUG Expo video. *The Macworld Tour: San Francisco '92* tape follows me, your tour guide, around the Expo. I meet BMUGers and other celebrities—even the Software Ventures chicken. There's a good demonstration of Userland Frontier by one of its programmers. It's only $15. ■

M.B.A.
Ph.D.
C.N.E.

We'll give you the third degree.

Just as some degrees help you in business and science, becoming a CNE makes you more valuable, too. When you're a CNE, it means you're a NetWare expert. So you receive job opportunities, and can command a higher salary. Plus, you receive other advantages that will help you manage networks more effectively.

Becoming one is easy. Simply register at your Novell Authorized Education Center by calling 1-800-LAN-STUDY (800-526-7883), and experience a whole new degree of success.

Certified Network Educators

Call Now To Reserve Your Place!
1-800-Lan Study
1-800-526-7883
500 Washington Street, 7th Floor, San Francisco, CA

NOVELL.

Whether your office has one computer or one hundred...

We keep you working

AUTHORIZED TECHNICAL SERVICES has the experience *and* the expertise to handle your equipment service needs. Whether you're running one small office with one micro computer, or a statewide network of offices with a complex inventory of computers, video display terminals, printers, and data communications devices—you simply cannot afford "down time". Call **ATS** today to find out just how easy it is to stay productive after hardware failures.

ATS
AUTHORIZED TECHNICAL SERVICES
1-800-451-4057

HERE'S A PARTIAL LIST OF EQUIPMENT WE SERVICE:
MICROCOMPUTERS: Advance Logic (ALR), AT&T, Everex, Leading Edge, AST Research, Compaq, IBM. **LOCAL AREA NETWORKS:** 3Com, Novell. **STORAGE DEVICES:** IOmega (Bernoulli). **DOT MATRIX PRINTERS:** Alps, Datasouth Epson, NEC, Qwint, Texas Instruments, C. Itoh, Digital Equipment (DEC), IBM, Okidata, Printek, Toshiba. **PLOTTERS:** Hewlett-Packard, IBM. **THERMAL PRINTERS:** IBM, Texas Instruments, Panasonic. **LINE PRINTERS:** Data Products, Printronix. **LETTER QUALITY PRINTERS:** C. Itoh, Diablo, NEC Spinwriters. **LASER PRINTERS:** Canon, Epson, Hewlett-Packard. **VIDEO DISPLAY TERMINALS:** Digital Equipment (DEC), Lear Siegler, Liberty (Freedom), Link, Qume, Tab, Televideo, Wyse. **GRAPHICS TERMINALS:** Graph-On, Northwest Digital, Pericom. **DATA COMMUNICATIONS:** Hayes, Prentice.

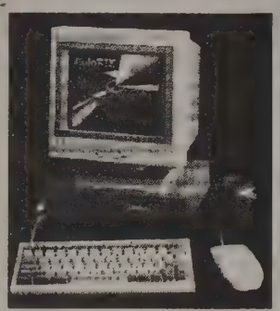
ATS SERVICE CENTERS:
Los Angeles (213) 568-8862
Orange County (714) 937-0332
Oakland (415) 638-4449
Sacramento (916) 923-2944
San Jose (408) 970-9860

Great Prices on Unique Items - Let HSC show you the way!

Just In!

Introducing Micro-Q

The tiny 286
with the power of a GIANT!



- ❑ AMD 286 - 12 Microprocessor
- ❑ 1 MB RAM (Expandable to 2 MB)
- ❑ AMI BIOS
- ❑ VGA Video Adaptor
- ❑ 2 Serial, 1 Parallel Port
- ❑ 1.44 MB Floppy Drive
- ❑ 40 MB IDE Hard Drive
- ❑ Full DOS Compatibility
- ❑ 9" Paper White VGA Mono Monitor

Now you can have the power of an AT on your desk without losing half your desktop...perfect for school, home office, wherever maximum power in a minimum package is needed! The incredible ***Micro Q*** packs all the above features in a box that is only 10.25" x 2" x 8.5" in size! It comes with a 80-key keyboard that is also tiny, only 6.5" x 11.5" and the mini-monitor with the crisp white VGA display stands only 10.5" high! You also get a two-button mouse! These are new, in-the-carton computers with a 1-year factory warranty.

HSC #MICRO-Q Complete! Only **$595.00**

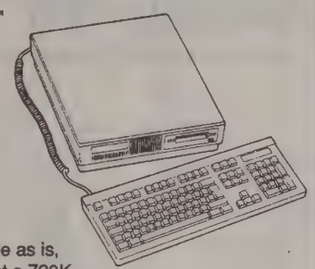
Sorry, COD Orders for this item must be cash or money order only! Call for total.

AT Starter Kit or Power Workstation

These workstations (Model WS 100) were made by Altos Computer for their System V networked computer system. They are essentially a stripped-down AT (80286) computer with a single 720K 3.5" floppy drive.

System Features:

- ❑ 6, 8, 10 MHz 80286 Microprocessor (Speed selectable at boot-up)
- ❑ Socketed for 80287 Math Co-Processor
- ❑ Compact Size: 3.3" x 16" x 13.6"
- ❑ Two 8/16 Bit Expansion Slots
- ❑ 720K 3.5" Floppy Disk Drive
- ❑ Serial Port, Parallel Port
- ❑ 75 Watt Power Supply
- ❑ 640K RAM
- ❑ AT/XT 101-key Keyboard



The units are 100% DOS compatible as is, you only need to find someone to format a 720K diskette with DOS for you. If you upgrade the BIOS chips with a standard AT set, you can install hard disks, 1.44M floppies, etc. (Sorry, at this time we do not have any BIOS upgrades). Just add a video card and monitor, and go! These units are new in the box with a 65-page excerpt from the user manual. 90-day warranty!

Altos WS100 System unit with keyboard & floppy HSC #13044 **$109.95**

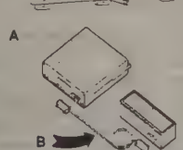
Special video package! Used (tested good) Monochrome Monitor (Amber) plus new Hercules-compatible mono card, only **$35.00** with above system. Or choose a new monochrome monitor and video card (1-year warranty) with above system for only **$108.00**.....other video units available, call !

An Electronic "Leash" and a Static "Watchdog"...

HSC is able to offer you two alarms that protect you in unusual ways...The first is the Sensor Alert seen at left. This is a pair of small units that are "tuned" to each other and like to be near one another! When they are separated by more than 15 to 30 feet, the receiver emits a beeping tone. Think of the uses! Put the transmitter on your small toddler at the shopping center, keep the receiver on your belt (both units have clips). If Junior wanders off...BEEP! Or put one on your car keys, you will never leave the room without them! The possibilities are endless. The receiver is only 2" x 2.75" x .5", and the transmitter is even smaller, only 1.5" x 2.25". Each unit uses three button cells (included). HSC #13024 only $6.95 for the set. The other alarm is our Static Charge Alarm, seen at right, which will alert you to the presence of static electricity fields in its vicinity. This is important to know when working with CMOS or other sensitive integrated circuits. The unit will beep when one of three selectable levels of static charge is detected, allowing you to take preventive action. Only 4" tall, and uses a 9VDC 300mA adaptor (included) or a 9V battery (not included). Prevent shocking developments! HSC #12846 only $4.95

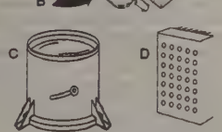
Electronic Project Potpourri!

Still some bargains left on our "Specials" shelf! These are just a few of the unique items at HSC, and some are in limited supply, so don't delay!



A. Ten channel Slide-pot Panel with LED's on the end of each slider. Measures 3" x 4.5", 13.5K Pots. Pinout included. HSC#12750 $2.95 or 10/$25.00

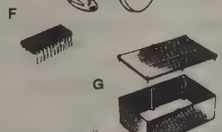
B. Printer Cable for IBM Convertible portable computer – uses special high density AMP 72-pin connectors (only 28 pins used). HSC #13002 $4.95



C. Projection TV Lens, 3.75" concavo-convex front lens, 3.75" convexo-convex center lens, 2.75" oddly-shaped rear lens. Approx .25" focus travel. Overall size 4.5" dia. x 4" long. New! HSC#12375 $12.50

D. 5 x 7 LED Array, .875" x 1.5" made by IEE (Part #IEE1057R) HSC#12811 $1.95 or 10/$15.00

E. Horn Speaker, 5" diameter, 8 ohm, 10 watts. Adjustable tilt base. HSC#12163 $4.95



F. Panasonic AN6291 dbx Stereo Noise Reduction System IC (same as NTE1744, compare at $6.92!) Pinout included. HSC#12851 $1.49 or 10/$12.50

G. Bud CU-284 Plastic Chassis Box with Lid Measures 7.5" x 4.5" x 2.25" New in carton. Compare at $9.30! HSC#12870 $4.95

H. Touch Element is the panel from a Koala Pad that translates your finger pressure into cursor movement. HSC #13005 $.95 ea. or 10/$7.50

Perestroika Fallout... Soviet Science Collector's Item!

History on the march! Empires crumbling! Eager young scientists being trained for the new world order! We took advantage of the changing world scene to bring to you these unique items that also represent great value...Russian (formerly Soviet) microscopes! The manual calls them training microscopes, we would probably call them student-grade instruments, although they are not toys. They are biological (illuminated from below via mirror) microscopes with two objective lenses (8x, 20x) and three eyepieces (7x, 10x, 20x). The optical quality and workmanship are surprisingly good, given the stories we've heard of Soviet labor woes. The base and hinged armature are handsome painted cast aluminum, and the objective turret and lens bodies are chrome-plated brass. The only assembly required is to screw the eyepiece tube into the frame, and drop in your choice of eyepiece. These units are new, liberally greased (!), packed with a large sachet of dessicant in styrofoam & cardboard, and tied with string! The six-page manual is in fair English, and is duly rubber-stamped with several acceptance dates (1988) and certification numbers on the back. You can think of it as a piece of history, or just a decent, inexpensive microscope, only $69.95! Hurry, limited quantites!

HSC #13065 **$69.95**

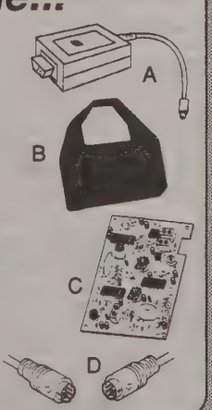
Apple Residue...

A. Macintosh peripheral device adaptor converts older Mac 128 & 512 style peripherals (9-pin D conn.) to the Mac Plus and higher Mini-DIN connector. Requires 15-17 VAC input .(we have this adaptor).
HSC #13001 $5.95

B. Apple Imagewriter I Nylon Ribbon Cartridge (black)
HSC #13003 $3.50 or 10/$29.95

C. MacVision Video Capture Project Kit– Consists of MacVision board, 9VAC Adaptor, DIN Cable and schematics. With a little assembly and testing (and some software we can not provide), you too could be digitizing video images with your Mac! Limited quantities!
HSC #12999 $24.95

D. Mac Mini-DIN Cable--6-foot 8-pin Male to Male
HSC #13009 $3.95



Halted specialties co. **HSC Electronic Supply**

Toll Free (Orders Only) 1-800-4 HALTED (1-800-442-5833)

Retail Stores:

3500 Ryder St., Santa Clara, CA 95051 (408)732-1573
4837 Amber Ln., Sacramento, CA 95841 (916)338-2545
6819 Redwood Dr., Cotati, CA 94931 (707)792-2277

Terms: Some quantities limited; all items subject to prior sale. **Minimum order: $10.00 plus shipping.** Orders under $20.00 subject to $2.00 handling fee, plus shipping. All orders shipped FOB Santa Clara (this means you pay freight!) by UPS Surface (no P.O. Boxes) unless otherwise specified, in which case prevailing carrier rate plus $5.00 handling fee applies. Prepaid orders that don't include shipping will be shipped freight COD. If you have questions about your order, call Customer Service at (408) 732-1854 M-F 9AM to 5PM PST.

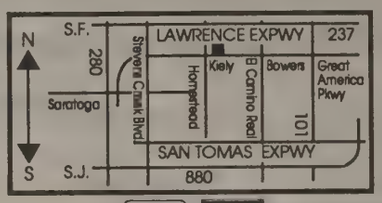
CENTRAL COMPUTER SYSTEMS, INC.

Since 1986

TEL: (408) 241-0185
FAX: (408) 241-0390

30 MONITORS ON DISPLAY
820 KIELY BLVD.
(Between Homestead & Kaiser)
Santa Clara, CA 95051

OPEN 7 DAYS
HOURS: M-F 9am-7:30pm
Sat & Sun 10:30am-6:00pm



- No surcharge for Visa and MasterCard
- Govt., universities, and qualified firms purchase orders welcomed
- Financing plan available OAC
- Prices are subject to change w/o notice and to stock on hand
- All brand names are registered trademarks
- Not responsible for typographical errors

INDEX for the following 3-pages

I Basic System
1. Micronics
2. Orchid
3. Nice

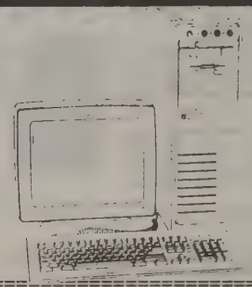
II Hardware
1. CD ROM Drive
   - Nec
   - Sony
   - Sound Blaster
   - CD software
2. Cases
3. Controllers
   - Acculogic
   - Adaptec
   - Future Domain
   - Ultrastor
4. Digitizers
   - Summagraphics
5. Drives
   - Conner
   - Fujitsu
   - Maxtor
   - Quantum
   - Seagate
   - SyQuest
   - Teac
6. Fax Machines
   - Sharp
7. I/O Cards
8. Keyboards
   - Keytronics
   - Northgate
9. Laptops
   - Everex
10. Laser Printer Acc.
    - HP
    - IQ Engineering
    - Laser Master
    - Pacific Data Prod.
11. Math CoProcessors
    - Chips and Tech.
    - Cyrix
    - Intel
12. Memory Cards
    - Acculogic
    - Everex
    - Intel
13. Memory Chips
14. Modems & Fax
    - Everex
    - Frecom
    - Hayes
    - Intel
    - US Robotics
    - Zoom
15. Monitors
    - Mitsubishi
    - Nanao
    - Nec
    - Panasonic
    - Samsung
    - Sony
    - ViewSonic
    - Wyse Terminal
16. Motherboards
    - Micronics
    - Nice
    - Orchid
    - Sprite
17. Mouse
    - Appoint
    - Logitech
    - Microsoft
    - Mouse System
18. Network
    - 3Com
    - Artisoft (Lantastic)
    - Castelle
    - Compulan
    - Intel
    - Novell
    - SMC (WD)
19. Power Supplies
    - APC (UPS)
20. Printers
    - Citizen
    - HP
    - Panasonic
    - QMS
    - TI
21. Scanner
22. Tape Back Up
    - Colorado
    - Mountain
    - Summit
23. VGA cards
    - ATI
    - Diamond
    - Orchid
    - Video Seven

III Software
- Adobe
- Borland
- Microsoft
- Norton (Symantec)
- SCO
- WordPerfect
- and others

IV Accessories
- [not listed ... visit us]
- Cables, Diskettes
- Cassettes (tape b.u.)
- Templates & others

A MILLION -DOLLARS OF INVENTORY IN STOCK

I BASIC SYSTEMS



MICRONICS

1MB
Teac 1.2 FD
IDE Controller, 2S 1P
Baby AT Case w/200 W
Mitsumi 101 Keyboard

486-33 EISA 256K cache ... $1419
486-33 ISA 256K cache 1119
386-33 Gemini 64K cache 749
386SX-20 Gemini 64K cache .. 559

ORCHID
(CAD station)

486-33 ISA 64K cache
4MB
Teac 1.2 FD
Maxtor 130MB HD
IDE Controller, 2S 1P
Mid Tower Case w/ 200W
Mitsumi 101 Keyboard
Panasonic 1395 1024x768, .28, NI
Fahrenheit 1280-D 1MB VGA
..... $2430

NICE
(Made in U.S.A.)

486-50 64K cache
1MB
Teac 1.2 FD
IDE Contorller, 2S 1P
Baby AT Case w/ 200W
Mitsumi 101 Keyboard
..... $1385

II HARDWARE

1 CD ROM

CD Caddy $15

COREL DRAW
BlockBuster CD ROM, Corel Draw CD, Artshow CD, with SCSI interface int / ext 935/995

NEC
CDR-73 CD Gallery for PC w/ 7 titles w/ interface .805
CDR-73M CD ROM reader, 280ms, 300Kb/s, ext .605
CDR-83M CD ROM reader, 280ms, 300Kb/s, int .545
Interface kit for PC 89

SONY (with controller, no software)
CDU 535-01 380ms SONY BUS int, hf ht 389
CDU 7205 380ms SONY BUS ext, hf ht 545
CDU 541-01 380ms True SCSI BUS int hf 515
CDU 541-01 without controller 425
CDU 7211 380ms True SCSI BUS ext hf 645
CDU 7211 without controller 555

Sound Blaster Pro CD-ROM Upgrade Kit
CD-ROM Int, 5 CD titles (no Sound Blaster Pro) .. 389
MIDI Kit 59
Multimedia Upgrade Kit, internal 579
Sound Blaster 110
Sound Blaster Pro 199

CD SOFTWARE
Atlas Pack 59
Battle Chess 49
CD Game Pack 49
CD Game Pack II 49
Corel Draw Artshow 1991 165
Groiler's New Electronic Encyclopedia 215
Illustrated Encyclopedia 2.0 65
King Quest V 45
Mammals 86
Microsoft Multimedia Development Kit 299
Microsoft Multimedia Beethoven 9th symphony 55
Microsoft Multimedia Bookshelf Windows / DOS .. 126
Mixed-up Mother Goose 39
Reference Library 75
Sherlock Holmes 45
Time Table of History 49
US Atlas 49
Wing Commander Crusade 55
World Atlas 49

2 CASES

AT Case $50
Baby AT w/ 200W Power 90
Baby Tower w/ 200W Power 95
Mid Tower w/ 220W Power 115
Full Tower with 250W Power 150
King Tower Case w/ 375W Power 550
Slim Case w/ 200W (2 drive bay) 105
WorkStation Case w/ 60W (1 drive bay) 105
Hard Disk Drive External Casing
2 half ht or 1 full ht, 60W 69
2 half ht or 1 full ht, 60W, 11lbs 119
3 half ht or 2 full ht, 60W, 13lbs 139

3 CONTROLLERS

4 Floppies w/ IDE controller for AT $49
IDE controller for AT 25
Speedstor Plus w/ SCSI controller 75

ACCULOGIC
sIDE-2 (2 IDE hard drive only) 30
sIDE-3 (2 FD & 2 IDE HD) 32
sIDE-4 (2 FD & 2 IDE HD, 2S & 1P) 52

ADAPTEC
1522M SCSI (controller only) 145
1522K SCSI w/ kit (10MB/s) 169
1542B SCSI w/ kit (15MB/s) 279
1640 SCSI w/ kit for MCA 345
1740 SCSI EISA controller only (H only) 469
1740 SCSI EISA w/ kit (H only) 499
ASW-1410 ASPI MS-DOS Manager v3.0 79
ASW-310 Sy-Tos Plus (Tape Back Up software) ... 99
ASW-410 CD-ROM driver v2.1 79

DTC
6280 1:1 ESDI 125
7287 1:1 RLL 73
WA-6 1:1 MFM 60

FUTURE DOMAIN SCSI Controller
TMC 875 for XT (F & H) controller only 119
TMC 875 for XT (F & H) w/ kit 179
TMC 860 for AT (H only) controller only 119
TMC 860 for AT (H only) w/ kit 159
TMC 885 for AT (F & H) controller only 139
TMC 885 for AT (F & H) w/ kit 229
TMC 1660 for AT (H only) controller only 149
TMC 1660 for AT (H only) w/ kit 249
TMC 1680 for AT (4F & H) (15MB/s) controller only 179
TMC 1680 for AT (4F & H) w/ kit 279

KOUWELL
Floppy controller (XT) 18
4 Floppies controller (XT,AT) 38
IDE controller 30
IDE controller w/ AT I/O (2S 1P 1G) 49

ULTRASTOR
ULT 12F/32 ESDI 32K cache 165
ULT 12C/1 ESDI 1MB cache 495
ULT 22CA ESDI EISA 64Kcache 669
ULT 15C IDE cache 259
ULT 14F SCSI 32K cache 259
ULT 24F SCSI EISA 64K cache 519

4 DIGITIZERS

Calcomp 33120 12x12, 4 button $289
SummaSketch II Plus 12x12, 4 button & pen 289
SummaSketch II Plus 12x12, 16 button 289
SummaSketch II Plus 12x18, 16 button 495
Unitech KD-4000 12x12, 4 button, 4 templates ... 225

5 DRIVES

Frame for 3.5" Hard Drive and Floppy Drive . $8
Removable Hard Drive Case for 3.5" HD 49

CONNER
CP-3000 40MB 25ms IDE 3.5", 1" ht 219
CP-30104 120MB 19ms IDE 3.5", 1" ht 375
CP-3204F 200MB 16ms IDE 3.5" 595
CP-3544 500MB 12ms IDE 1" ht 1295

FUJITSU (5 years warranty by manufacturer)
M2263SA 680MB 16ms SCSI 5.25" full 1285
M2266SA 1.2GB 15ms SCSI 5.25" full 1825

IOMEGA (BERNOULLI)
Insider 44 / 90 internal master drive 825/820
Transportable 44 / 90 external drive 935/855
Bernoulli 44MB / 90MB 3-pak disks 275/440

MAXTOR
8760-760H 676MB 16ms ESDI 5.25" full 1285
MXT-7080A 80MB 17ms IDE 3.5" 32K cache .. 315
MXT-7120A 130MB 15ms IDE 3.5" 375
LXT 213A 213MB 15ms IDE 3.5" 595
LXT 340A 340MB 13ms IDE 3.5" 895
LXT 7120S 130MB 15ms SCSI 349
LXT 213SY 200MB 15ms SCSI 3.5" 579
LXT 340S 340MB 13ms SCSI 925
8760S-760 676MB 16ms SCSI 5.25" full 1285
PO-12 1.2GB 13ms SCSI 1825
PI-17S 1.7GB 13ms SCSI 2295

MICRO SOLUTIONS (External Hard Drive)
40MB External Drive (printer port) 395
100MB External Drve (printer port) 495

PACIFIC RIM (External)
1.2MB External Floppy Drive (printer port) 198

PLUS DEVELOPMENT (Hard Card)
Hardcard 20 20MB, 8 bit XT 335
Hardcard II XL 50 50MB, 9ms 315
Hardcard II XL 105 105MB, 9ms 425

QUANTUM
LPS-52AT 52MB 17ms IDE 249
LPS-105AT 105MB 17ms IDE 345
LPS-120AT 120MB 16ms IDE 256K cache 385
LPS-240AT 244MB 16ms IDE 256K cahce 655
LPS-105S 105MB 17ms SCSI 64K cache 369
LPS-120S 120MB 16ms SCSI 256K cache 405
PRO-210S 210MB 15ms SCSI 64K cache 625

SEAGATE
ST-351A 40MB 28ms IDE 3.5" 219
ST-3096A 89MB 15ms IDE 3.5" 315
ST-3144A 130MB IDE 3.5" 379
ST-1239A 211MB 15ms IDE 3.5" 589
ST-251-1 40MB 28ms MFM 5.25" hf ht 225
ST-4097 80MB 28ms MFM 275

SYQUEST (Removable cartridges)
SQ44I 44MB internal, uses removable cartridge .. call
SQ44e 44MB external, uses removable cartridge .. call
SQ400 44MB removable cartridge 79
SQ88i 88MB internal, uses removable cartridge .. call
SQ88e 88MB external, uses removable cartridge .. call
SQ800 88MB removable cartridge 129

SYSGEN (External Floppy Drive)
Portable EasyFloppy 3.5"/5.25" for laptop 235

TEAC (Floppy Drive)
360K 5.25" 59
720K 3.5" w/ frame 57
1.2MB 5.25" 59
1.44MB 3.5" w/ frame 57
2.8MB 3.5" w/ frame 99

6 FAX MACHINE

SHARP
FO-130 ..... $389
FO-216 automatic paper cutter 452
FO-240 error correction mode 529
FO-334 remote retrieval 585

7 I/O CARDS

DTK
Hexa I/O (XT : S,P,G,Clock,Cont) $37
AT I/O (S,P,G) 32
Game Card (XT, AT) 17

EVEREX
Magic AT I/O (1S 1P) 49
Magic AT I/O w/ Game port (1S 1P 1G) 57
Magic AT I/O Plus (w/ 16C550UART chip) (1S 1P) . 62
Second serial port for above AT I/O cards 25

HAYES
ESP enhanced serial port-data comm (2S) 209

KOUWELL
1 Serial w/ NS16550AFN chipset (XT, AT) 40
AT I/O (2S 1P) 32
AT I/O (2S 2P) 38
AT I/O w/ IDE (2S 1P 1G) 49
Printer Card (XT, AT) 17
Serial Card (XT, AT) 17

MORE ON NEXT PAGE

CENTRAL COMPUTER SYSTEMS, INC.

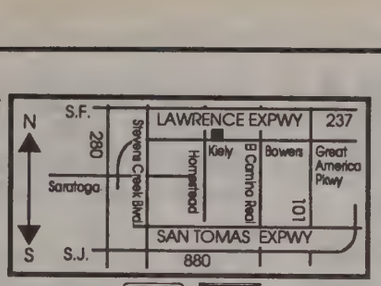
Since 1986

TEL: (408) 241-0185
FAX: (408) 241-0390

30 MONITORS ON DISPLAY

820 KIELY BLVD.
(Between Homestead & Kaiser)
Santa Clara, CA 95051

OPEN 7 DAYS
HOURS: M-F 9am-7:30pm
Sat & Sun 10:30am-6:00pm



- No surcharge for Visa and MasterCard
- Govt., universities, and qualified firms purchase orders welcomed
- Financing plan available OAC
- Prices are subject to change w/o notice and to stock on hand
- All brand names are registered trademarks
- Not responsible for typographical errors

8 KEYBOARDS

NORTHGATE OMNI
101NI $69
102 69
Ultra T 95
Keyboard cover for 101 / 102 / Ultra 15
SIIG (click)
Suntouch Jr. 84-key mini keyboard 49
Suntouch 101 57
OTHERS
BTC 84-key mini keyboard 39
KEYTRONIC 101 45
MAXI 101 35
MITSUMI 101 35

9 LAPTOPS

EVEREX
Tempo LX 386-20SX 1MB,1.44FD,VGA LCD,7lb
60MB HD $1755
2MB card (3rd party) 235
Battery 115
Tempo Carrier 386SX-20,2MB,1.44FD,VGA LCD,5.3lb
40MB HD 2395
80MB HD 2850
MICRONICS
386SX-16, 1MB,1.44FD,40MB HD, Windows 1495
386SX-20, 1MB,1.44FD,40MB HD, Windows 1745
386-25, 4MB, 1.44FD, 40MB HD, Windows 2595
MITAC
386SX-20, 2MB,1.44FD,60MBHD,ext fax modem 1950
PANASONIC
CF-370 386SX-20,1MB,1.44FD,60MB HD 2495
SAMSUNG
Notemaster 386SX-16 1MB, 1.44FD, 20MB HD
640x480 VGA display,Win 3.0 & Lap-Link 1745
SIIG ("Loaf of bread"-sized computer)
MiniSys 3000 AMI BIOS, 1.44FD, IDE interface,
2S 1P 1G, SVGA card 512K, 40W ext power supply,
supports 1" high 3.5" HD IDE, 7.5 lbs
386SX-16 1MB 695
386-25 2MB 895
TWINHEAD
386SX-20 1MB, 1.44FD, 40MB HD, LCD 2095
386SX-20 1MB, 1.44FD, 120MB HD, LCD 2295
MEMORY for laptops : Compaq, Toshiba, others . call

10 LASER PRINTER ACC.

ADOBE ... see Adobe in Software section
COMPUTER PERIPHERALS
Jet Page (for HP II) $295
GENISIS (for HP II,IID,III,IIID;QMS 810,815,820,825)
JetTray 1500 (1500 sheet capacity) 456
JetTray 250E (250 envelope capacity) 456
HP ... see HP in Printer section #20
IQ ENGINEERING
Super Cartridge 1
for all HP Laser&True HP Compatibles 139
Super Cartridge 2 for HP II, IID, IIP, IIP+, III, IIID .. 249
Super Cartridge 2 & 2LC 269
Super Cartridge 3 Pro+ for HP III,IIID,IIIP,IIISi 249
Super Cartridge 3 Creative Collection for III family . 249
Desk Jet 500 Professional 99
Desk Jet Plus Professional 99
LASER MASTER
WinJet 800 600dpi, Postscript adapter
for HP II,IID,III,IIID (requires 8MB in system) .. 705
PACIFIC DATA
25 in One! III (for Deskjet 500) 105
25 in One! III (for HP II, IID, IIP, IIP+, III, Microtek) 245
Complete Font Library
for HP III, IIID, IIIP 255
Font Bank (NEW) (for all HP Laserjet)
stores soft fonts, 0.75MB / 1.5MB 205/269
Headlines Cartridge
for HP II, IID, IIP 185
MacPage Driver and Connection Kit
for Mac & HP II, IID, IIP, IIP+, III, IIIP 95
Paicfic Connect (for HP II, IID, IIP, IIP+, III, IIID, IIIP)
connect up to 5 PC and/or Mac to a printer
256K 265
1.25 MB 299
Pacific Page & 2MB (Postscript for HP II) 389
Pacific Page P.E. (for HP IID,IIP,IIP+,III,IIID, IIIP) .. 269
Pacific Page P.E. & 2MB 405
Pacific Page P.E. & Pacific Talk
for Mac & HP IID, IIP, IIP+, III, IIID, IIIP 399
Pacific Page XL (for HP IIP, IIP+, III, IIID, IIIP)
Postscript emulation cartridge
comes with 2MB & accelerator board
8 times faster than other cartridges 649
Pacific Page XL & Talk
for Mac and HP IID, IIP, IIP+, III, IIID, IIIP 785
Pacific Print
for network & HP II, IID, IIP, IIP+, III, IIID, IIIP .. 99
Plotter in a Cartridge (for HP II) 225
Plotter in a Cartridge P.E.
for HP IID, IIP, IIP+, III, IIID, IIIP 225
1-2-4 Plus (for HP II, IID)
1MB 139
2MB 179
4MB 269
Pacific 4 Memory (for HP IIP, IIP+, III, IIID, IIIP)
1MB 109
2MB 149
4MB 239
Pacific SI Memory (for HP IIISi)
1MB 99
4MB 269
LP Memory (for IBM 4019E)
1MB 129
2MB 179
3.5MB 249
Pacific T Memory (for Epson 6000)
2MB 209
4MB 299
PANASONIC see Panasonic in section #20
MEMORY for Laser Printers: Canon, Epson, HP
IBM, Okidadta, Panasonic, QMS, TI ..... call

11 MATH CO-PRO , CPU

CHIPS and TECHNOLOGIES
387 - SX20 / SX25 ..... $105/119
387 - DX20 / DX25 ..... 125/125
387 - DX33 149
CYRIX
83S87 - SX16 109
83S87 - SX20 / SX25 ..... 119/129
83D87 -25 169
83D87 -33 179
83D87 -40 189
INTEL
80287XL (for all 286DX) 89
80387 - SX16 129
80387 - SX20 135
80387 - 33 (for all 386DX) 199
RapidCAD Engineering Co-Processor for 386DX .. call
386DX - 25 CPU 120
386DX - 33 CPU 130
386DX - 40 AMD CPU 140
486DX - 25 CPU 365
486DX - 33 CPU 430
486DX - 50 CPU 640

12 MEMORY CARDS

ACCULOGIC
RAMpAT! up to 16MB(SIMM),16 bit(AT) $99
SIMM-ply Ram, 8/16 bit, 8MB (SIMM) max, XT AT . 165
SIMM-ply Ram PS/2, 16 bit, 8MB max, PS/2-50,60 179
SIMM-plyRam PS/2-32,32bit,8MB max,PS/2-70,80 189
EVEREX (all come 0K on board)
XT 2MB, EMS 55
Ram 3000 Deluxe (up to 3MB, EMS, for AT) 84
Ram 8000 (up to 8MB, EMS, for AT) 165
Ram 10000 (up to 10MB, EMS, for AT) 125
Ram II 4000 (PS/2-5,6,7,80) 175
INTEL
Above Board w/ 512K 275
KOUWELL
640K RAM Card (XT only) 29
KINGSTON MEMORY for Apple,Compaq,IBM . call

13 MEMORY CHIPS

DRAM
1 MB x 1 - 8 ..... $4.35
256K - 8/10 ..... 1.09/1.09
256K x 4 - 8 ..... 4.50
64K - 10 ..... 1.09
64K x 4 -10 ..... 1.80
PS/2: 256K x 36 = 1MB 59
512K x 36 = 2MB 99
1MB x 36 = 4MB 149
2MB x 36 = 8MB 309
SIMM
4 MB x 9 - 6 / 7 / 8 ..... 159/149/139
1 MB x 9 - 6 / 7 / 8 ..... 40/38/36
1 MB x 8 - 6 / 10 (Mac) 34
256K x 9 - 8 11
SIPP
1 MB x 9 - 8 39
256K x 9 - 8 12
KINGSTON MEMORY for
Apple, AST, AT&T, Compaq,IBM,Nec,Sun ..... call

14 MODEMS & FAX

KONEXX 108
connects modem to any telephone $119
EVEREX
Evercom 2400 Baud Internal 79
Evercom 2400 Baud Internal w/ MNP5 139
Evercom 9600 v.32,v.42,v.42bis,MNP5 Internal ... 495
Evercom 2400 Baud External w/ MNP5 185
Fax Modem 2400/9600 Internal w/ MNP5 239
Pocket Modem for Laptop 2400 w/ MNP5 215
FRECOM
Fax 96 95
Fax 96 w/ 1 Liner & Far Fetch Fax 135
Fax 96 & modem for DOS 119
Fax 96 & modem for Windows 129
Fax 96 w/ 1L&FFF & modem for DOS 169
Fax 96 w/ 1L&FFF & modem for Windows 189
HAYES
Optima 96 v.32,v.42,v.42bis, MNP 5, Ext 389
Pocket edition 2400 w/ Smartcom FZ 129
SmartModem 2400B Internal 245
SmartModem 2400B External 285
Ultra 96 x.32,v.32,v.42,v.42bis,MNP5 Ext 635
Ultra 144 x.32,v.32,v.32bis,v.42,v.42bis, MNP5, Ext 769
V-series SmartModem 9600 v.42,v.42bis,MNP5,Ext 489
INTEL
9600EX v.32,v.42,v.42bis Ext 459
14400EX v.32,v.32bis,v.42,v.42bis Ext 555
SatisFaxtion Classic Card Int 369
US ROBOTICS
Courier 144 v.32,v.32bis,v.42,v.42bis,MNP5, Int ... 535
Courier 144 v.32,v.32bis,v.42,v.42bis,MNP5, Ext .. 555
Courier HST-DS144 (same features as above), Ext 775
Sportster 96 v.32,v.42,v.42bis,MNP5, Int 325
Sportster 96 v.32,v.42,v.42bis,MNP5, Ext 369
Shared Access Modem Sharing Kit 675
ZOLTRIX
2400 baud modem w/ MNP5 49
96/24 send & receive fax/modem w/ MNP5 85
96/24 send & receive fax/modem MNP5 v.42 115
Pocket send & receive fax/modem, Ext 169
ZOOM
96/24 fax modem v.42bis, MNP5 Int 135
96/24 fax modem v.42bis, MNP5 Ext ..... call
96/96 fax modme v,32, v.42bis, MNP5 Int 245
96/96 fax modem v,32, v.42bis, MNP5 Ext ..... call

15 MONITORS

ADI
14" VGA, 1024x768, .28 ..... $299
GOLDSTAR
1460 Plus 14" 1024x768 299
MATSUSHITA (VIEWSONIC)
ViewSonic 4e 14" , 1024x768, .28, Int 319
ViewSonic 5 14" , 1024x768, .25, NI 515
ViewSonic 5+ 14", 1024x768, .25, NI 545
viewSonic 5e 14", 1024x768, .28, NI 445
ViewSonic 6 14", 1024x768, .28, NI 375
ViewSonic 7 17", 1280x1024, .28, NI 1155
ViewSonic 8 20", 1280x0124, .31, NI 1655
MITSUBISHI (w/ base)
HL6805ATK 16", 1280x1024, NI 945
HL6945ATK 20", 1280x1024, .31, NI 1745
BNC Cable 39
NANAO
9070U 16", 1024x768, .28 NI 895
9060i 16", 1280x1024, .28 NI 1045
560i 17", 1280x1024, .25, NI 1895
F550i 17", 1280x1024, .28, NI 1175
9500 20", 1280x1024, .31 NI 1745
T660 20", 1280x1024, .31 NI 1845
NEC
3FGX 15", 1024x768, .28 669
4FG 15" Flat, 1024x768, .28, NI 779
5FG 17" Flat,1280x1024, .28, NI 1395
5D 20", 1280x1024, .31 1995
6FG 21" Flat, 1280x1024, .28 2895
PANASONIC
C1361I 14" Super VGA, 1024x768, .28, Int 325
C1395 14" 1024x768, .28, NI 445
C1991 20" 1028x768, .31, NI 1545
POWER II
3E 14" Super VGA, 1024x768, .28, int 299
4E (AOC) 14"Multisync, 1024x768, .28, NI 349
SAMSUNG
MA2565 12" mono amber 75
MZ4571 14" mono paperwhite 115
ML4571 14" VGA mono 640x480 125
CVM4967 14" 1024x768, .28 315
CSD 15" Flat, 1024x768, .26, NI 535
CSA 7571 17", 1024x768, .31, NI 875
SEIKO
CM1450 14", 1024x768, .25, NI 549
CM2050 20", 1024x768, .31, NI 1650
SONY
1304 14", 1024x768, .25, NI 569
1604S 17", 1024x768, .25, NI 1055
1936 20", 1280x1024, .30 NI 2395
STANDARD TECHNOLOGIES
441 14", 640x480, .41 235
TAXAN
UV1000 20", 1280x1024, .31, NI
refurbished / new 1395/1850
WYSE
370 14" 640x480, .31, 64colors, dual port 795
ANSI 105 / ASCII Keyboard 125

16 MOTHERBOARDS

286-16 ..... $125
386SX-16 145
386-33 128K cache w/o CPU 185
DTK
386SX -16 220
386SX -20 275
386-25 w/o cache 365
386-33 64K cache 465
486-33 64K cache (Novell certified) 775
MICRONICS
386SX-20 Gemini, Phoenix BIOS (32MB max) ... 285
386SX-25 250
386-33 64K cache Gemini (32MB max) 475
486SX-20 555
486-33 256K cache ISA 845
486-33 256K cache EISA E2 1145
486-50 256K cache ISA 1445
486-50 256K cache EISA 1825
MICRONICS ACCESSORIES
4MB Piggy Back (up to 8MB) 455
16MB Memory Card 150
upgrade to 256K cache 80
NICE
486-33 64K cache 725
486-50 64K cache 1099
upgrade to 256K cache 70
ORCHID
486-33 64K cache, AMI BIOS (32MB max) 895
386-40 128K cache, AMI BIOS (32MB max) 595
486-50 256K cache ISA 1399
upgrade to 256K cache 80
SPRITE
SM386SX-20 195
SM386-33 128K cache 335
SM386-40F 128K cache 345
SM486-33 128K cache 665
SM486-33 256K cache 685
SM486-40 256K cache w/ fan kit 715
VSLI 286-12 115

17 MOUSE

APPOINT
MousePen Pro for PC / Portable / Mac $67
Thumbelina for PC / Portable / Mac 67
GENIUS
CLIX 3-button 19
GM-F302 mouse (3 button, PS/2 compal) 42
KENSINGTON
Expert mouse (serial trackball) 99
LOGITECH
Cordless Mouse 79
Dexxa Serial Mouse 27
First Mouse Serial 37
FotoMan Digital Camera for DOS System 585
Mouseman Bus 64
Mouseman Serial PS/2 combo 65
Mouseman Serial w/ Windows 3.0 119
Scanman 32 147
Scanman 256 259
Scanman 256 with OCR software 305
Trackman Bus 69
Trackman Portable 99
Trackman Serial 59
MICROSOFT
Ball Point Mouse (portable) 119
Bus Mouse 400PPI 89
Bus Mouse (400PPI) w/ Windows 149
Serial Mouse 200PPI 69
Serial Mouse 400PPI 89
Serial Mouse (400PPI) w/ Windows 139
MOUSE SYSTEMS
Omni Mouse (2 button) 29
PC Mouse III Serial (optical) 69
PC Mouse III Bus w/ Power Panel (optical) 89
PC Trackball 39
The White Mouse w/ Power Panel 56

18 NETWORK

3COM
3C503 8 bit coax ethernet 187
5 packs (5 boards 1 manual) 799
3C507 16 bit coax ethernet / 5 packs 279/1250
3C503-TP 8 bit TP ethernet / 5 packs 250/1050
3C507-TP 16 bit TP ethernet / 5 packs 299/1450
3C523B Etherlink/MC for PS/2 / 5 packs ... 289/1210
3C523B-TP TP for PS/2 / 5 packs 319/1435
ARTISOFT
Lantastic AE-2 Ethernet starter kit,10Mbps 465
Lantastic AE-3 Ethernet starter kit,10Mbps 535
Lantastic 10BaseT starter kit 595
Lantastic 2Mbps starter kit 355
Lantastic Z (2 stations) 89
Lantastic /AI software (individual node) 69
Lantastic Ethernet Software Kit (NOS) 79
Lantastic AE-2 Ethernet adapter 204
Lantastic AE-3 Ethernet adapter 235
Lantastic AE-2/T 16bit 10Base-T adapter 210
Lantastic AE-1/T 8bit 10Base-T adapter 135
Lantastic 2Mbps adapter 145
64K RAM upgrade for AE-2, AE-3 adapter 45
Articom (LAN modem sharing software) 269
Lantastic for Netware 269
Lantastic for Windows Network Utilities 165
Central Station Connectivity Processor 405
Peer-Hub 10Base-T concentrator 270
Peer-Hub AUI interface kit 270
Network Eye (Remote Control Access Program) .. 129
Remote Boot ROM for AE-2, AE-3 adapter 45
Sounding Board adapter kit 72
CASTELLE
FaxPress (Network Fax Server)
Fax from within DOS or Win application, supports
PCL,Postscript emultion, supports Novell,
MS LAN, IBM LAN (different model)
Novell 1 line ethernet coax 2595
Novell 2 lines Token Ring 16/4Mbps 3225
JetPress (Network Print Server) for HP II,IID,III,IIID
supports thin ethernet and 10BaseT, supports
up to 32 queues on up to 8 file servers 429
LANPress (Network Print Server)
connects up to 4 printers, supports up to 32
queues on up to 8 file servers
Ethernet Thick/Thin coax (1P 3S) 489
Ethernet Thick/Thin coax (2P 2S) 639
Ethernet 10BaseT (1P 3S) 489
Ethernet 10BaseT (2S 2P) 639

MORE ON NEXT PAGE

CENTRAL COMPUTER SYSTEMS, INC.

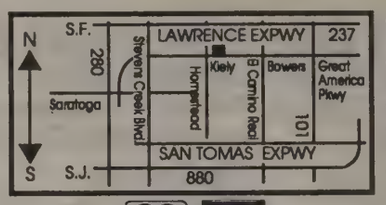
Since 1986

TEL: (408) 241-0185
FAX: (408) 241-0390

30 MONITORS ON DISPLAY

820 KIELY BLVD.
(Between Homestead & Kaiser)
Santa Clara, CA 95051

OPEN 7 DAYS
HOURS: M-F 9am-7:30pm
Sat & Sun 10:30am-6:00pm



- No surcharge for Visa and MasterCard
- Govt., universities, and qualified firms purchase orders welcomed
- Financing plan available OAC
- Prices are subject to change w/o notice and to stock on hand
- All brand names are registered trademarks
- Not responsible for typographical errors

COMPULAN
8 bit E100 coax ... 95
16 bit E200 coax ... 105
16 bit E300 coax dual-port shared memory ... 129
16 bit E200/2 coax for MCA ... 145
16 bit E800/2 coax dual-port shared memory MCA 155
32 bit E900 coax ... 215
8 bit ET500 TP ethernet ... 115
16 bit ET600 TP ethernet ... 129
32 bit E950 TP ethernet ... 229
Boot Prom ... 25
Pocket adapter for arcnet ... 135
Pocket adapter for coax ethernet ... 185
8 port concentrator (10BaseT ethernet) ... 379
12 port concentrator (10BaseT ethernet) ... 520
Token ring T1000 16/4Mbps ... 329
Token ring T1000/2 16/4 Mbps for MCA ... 349
8-port MAU Type 1 cable, DB9 shielded TP ... 279

FARALLON
PN380 PhoneNet card PC for LocalTalk ... 203
PT100 PhoneNet talk for PC ... 145

GATEWAY COMMUNICATION
G/Ethernet 16 coax / 10 pack ... 159/1475
G/Ethertwist 16 TP / 10 pack ... 179/1565

INTEL
EtherExpress 16 ... 135
EtherExpress 16TP ... 153
EtherExpress 32 EISA ... 553
NetPort for Ethernet ... 469
NetPort for Ethernet TP ... 479
NetPort for Token Ring ... 825
NetSatisfaxtion ... 635
TokenExpress 16/4 for ISA ... 535
TokenExpress 16/4 for MCA ... 535
TokenExpress 16/4 for EISA ... 685

NOVELL
8 bit NE1000 coax ethernet ... 145/175
16 bit NE2000 coax ethernet ... 165
16 bit NE2000TP TP ethernet ... 185
32 bit NE3200 coax ... 759
Netware Lite ... 74
Netware 2.2
5 users / 10 users ... 499/1090
50 users / 100 isers ... 1935/2955
Netware 3.11
5 users / 10 users ... call/1375
20 users / 50 users ... 1935/call
100 users / 250 users ... 3885/6885

SMC (WESTERN DIGITAL)
8 bit coax Ethercard Plus Elite ... 139
6 pack ... 715
16 bit coax Ethernet Plus Elite / 6 pack ... 162/905
16 bit TP Ethercard Plus Elite 16T / 6 pack .. 189/975
Ethercard Elite 16 combo (coax/10BaseT) ... 225
Ethercard Plus/A for PS/2 ... 220

XIRCOM
PE2-10B2 Pocket Adapter Ethernet coax ... 325
PE2-10BT Pocket Adapter Ethernet 10BaseT ... 357
PT2-16B3 Pocket Adapter Token Ring 16/4Mbps . 615

CABLES & ACCESSORIES ... call

19 POWER SUPPLIES

AMERICAN POWER CONVERSION (UPS)
APC-400 Smart-UPS 400VA, 2-3ms, 15 mins ... $305
APC-800 Back-UPS 800RT 800VA, 2-4ms, 10mins 565
APC-750 On-Line UPS 750VA, 0ms, 15mins ... 1365

LEADMAN
150W / 200W (XT) (UL) ... 40/48
200W for Baby AT & Tower ... 45
230W for AT ... 48
230W for Tower ... 59
550W (UPS) ... 279
1200W (UPS) ... 999

20 PRINTERS

CANON
BJ-10ex (Bubble jet)360 dpi,37K buf ... $319
Auto Sheet Feeder ... 79
Bag / Battery ... 39/45
Print Head Cartridge ... 22

CITIZEN
GSX 200 (9 pin) ... 165
GSX 130 ... 239
GSX 140 Plus (24 pin) ... 299
Color Option for above printers ... 45
Auto Sheet Feeder for GSX 140 ... 109
GSX 145 (24 pin, 132 column) ... 379
Color option for GSX 145 ... 65
PN48 notebook printer,1ppm,2lb,battery,case ... 339

EVEREX ABATON (Postscript compatible)
Laserscript LX 2.5MB,6ppm,35 fonts ... 1099

FUJITSU
DL1100 mono ... 295

HEWLETT PACKARD (LaserJet w/ toner)
Desk Jet 500 ... 395
Desk Jet 500C ... 679
Jet Ram Memory 256K ... 69
Laser Jet IIP+ ... 775
Laser Jet III ... 1475
Laser Jet IIIP / IIID / IIISi ... 995/2395/3495
Accessories:
Envelope Tray(15 envelopes) for III ... 69
Envelope Tray for IIP,IIIP ... 79
Envelope Feeder for IIID ... 295
HP Postscript Cartridge for IIP, IIP+, III, IIID .. 395
Legal Tray for HP II, III ... 69
Lower Cassette (w/ letter tray) IIP,IIIP ... 160
Toner for HP II, III ... 85
Toner for HP IIP, IIP+, IIIP ... 75
Jet Ram Memory for HP II
2MB / 4MB ... 135/205
Jet Ram Memory for HP IIP, IIP+,III,IIIP,IIID
1MB / 2MB ... 75/115
3MB / 4MB ... 155/195

MICROTEK
TrueLaser 6ppm,2MB,35 fonts ... 1365

PACIFIC DATA PRODUCTS
ProTracer inkjet printer/plotter, A- to C-size output
360dpi, i960RISC processor, 512K, 45dBA ... call

PANASONIC
1180i / 1123 ... 155/195
1124i / 1624 / 1695 ... 279/349/359
Auto sheet feeder for 1124 only KX-P36 ... 120
2123 24 pin, 43.5dBA, color capability ... 249
2180 9 pin, 45dBA, color capability ... 175
Color upgrade kit KX-PCK11 ... 49
Single bin cut sheet feeder KX-PT10 ... 95
2624 (24 pin, quiet printer 46.5 dBA) ... 379
32K Buffer for all dot matrix printers KX-P43 ... 65
Serial interface card KX-P19 ... 75
4410 Laser, 512K 5ppm ... 645
1MB board KX-P444 ... 175
LaserBoard 1MB (3rd party) ... 149
Corona KX-PCR3 ... 45
Developer KX-PDP4 ... 105
Drum KX-PDM4 ... 89
Extra Cassette KX-PKC2 ... 45
Fonts Card KX-P47x ... 95
Fuser Unit KX-PFS5 ... 105
Optional Second Cassette KX-P495 ... 135
Toner KX-P453 ... 35
4420 Accessories
RamBoard 1MB / 2MB / 4MB ... 99/139/219
Developer KX-PDP2 ... 95
Drum KX-PDM2 ... 99
Envelope Tray KX-P431 ... 59
Fonts Card ... 95
Legal Tray KX-P425 ... 45
Ozone Filter KX-PFT2 ... 26
Toner KX-P451 ... 39
4450 Accessories
RamBoard 1MB ... 139
others same as 4450i
4450i Laser, 11ppm ... 1055
RamBoard 1MB / 2MB / 4MB ... 99/139/219
Developer KX-PDP1 ... 95
Drum KX-PDM1 ... 145
Envelope Tray KX-P430 ... 59
Fonts Card ... 95
Legal Tray KX-P420 ... 45
Ozone Filter KX-PFT1 ... 29
Toner KX-P450 ... 35
4455 (Postscript) 11ppm ... 1685
RamBoard 1MB ... 159
others same as 4450i

QMS (Adobe Postscript)
QMS-PS 410 4ppm, 2MB, 45 Fonts ... 1495
1MB / 2MB / 4MB Memory ... 125/165/245
Envelope / Legal / Letter Tray ... 69/69/69
Lower Cassette with Letter Tray ... 160
Toner ... 95

SEIKO
Smart Label Printer Plus (IBM/APPLE) ... 169
Box of Label (2 rolls per box) ... 10.95

TEXAS INSTRUMENT
MicroLaser Plus PS17 / PS35 9ppm ... 1199/1455
Apple Talk Kit ... 99

PELICAN All type ribbons ... visit us

21 SCANNER

TAMARACK ArtiScan Flatbed Scanner 24 bit color, 256 gray levels, comes with ColorShop 24 and Photostyer image editing software, SCSI interface
TTI 3000C 300dpi ... $1195
TTI 6000C 600dpi ... 1295
Slide Scan Kit (for transparency,slide,X-ray) .. 695
Hand scanners ... see Logitech in section #17

22 TAPE BACKUP

COLORADO
DJ-10 (120MB) QIC-40 w/ cable ... $205
DJ-20 (250MB) QIC-80 w/ cable ... 265
AB-11 External tape port ... 45
Cable (2 Floppies & tape back up) ... 9
FC-10 Controller ... 95
KE-09 Ext kit w/o controller ... 75
TC-15 controller w/ data compression ... 195
Unix/Xentx driver for DJ-10, 20 ... 129
QFA-700 (700MB) ... 775
TC-02 adapter (required) ... 259

EVEREX
EV-811 8 bit adapter QIC-02 for XT,AT ... 105
EV-880 floppy tape adapter for AT ... 65

MICRO SOLUTIONS (External)
40MB / 80MB External (printer port) ... 365/425

MOUNTAIN NETWORK SOLUTIONS
FS1200 1.3GB,4mm,SCSI cont,int/ext ... 3595/3905
FS2100 2.2GB, 8mm, w/ SCSI cont, ext ... 4895
FS7250 150-250MB, QIC-02, w/ cont, ext ... 1435
FS7250 250MB, w/ SCSI cont, ext ... 1585

SUMMIT
SE120 120MB w/ Central Point Back up ... 195
SE250 250MB w/ Central Point Back up ... 255
All SIZES OF CASSETTES ... visit us

23 VGA CARDS

All cards 1024x768 except as stated

CGA card ... $32
MGP card (Monographic w/ Printer) ... 32
ET4000 Tseng Lab 1MB ... 125
Oak067 Super VGA 512K ... 69
Oak077 Super VGA 1MB ... 85

ATI
Wonder XL series w/ mouse, 1MB, Hi-color ... 209
Graphics Ultra Plus 1MB (VRAM) w/ mouse ... 489
Graphics Vantage Plus 1MB(DRAM) w/ mouse ... 349

DIAMOND
Speedstar Plus 1MB w/Sierra Hi-color chip ... 189
Stealth 1MB VRAM w/ Sierra HI-color 1280x1024 . 299

EVEREX
Viewpoint Standard (800x600) ... 75
Viewpoint NI 256K/512K ... 129/149
VRAM (1MB DRAM) ... 285

GENOA
7800 1MB 1280x1024 ... 155
7860 1MB 1280x0124 Hi-color ... 175
8800 1MB 1280x0124 ... 255
8860 1MB 1280x1024 Hi-color ... 275

HERCULES Graphics Station 1MB/3MB ... call

NUMBER NINE (TI34020)
GXI Level 22 for Windows 1280x1024
16 colors at 72Hz, 1MB VRAM ... 939
GXI Level 23 for CAD 1280x1024
16 colors at 72Hz, 1MB VRAM 1MB DRAM . 1225
GXI Level 24 for Windows 1280x1024
256 colors at 72Hz, 2MB VRAM ... 1299
GXI Level 25 for Windows 1280x1024
256 colors at 72Hz, 2MB VRAM 1MB DRAM 1445

ORCHID
Fahrenheit 1280 1MB with Hi-color,1280x1024 ... call
Fahrenheit 1280-D 1MB with Hi-color,1280x1024 . call
ProDesigner IIs 1MB without Hi-color ... 159
ProDesigner IIs 1MB with Hi-color ... call
ProDesigner IIs-D 1MB with Hi-color ... call

UNITED SOLUTIONS
Image 800x600 16bit w/256K ... 55
Ultra 1MB 1280x1024 Hi-color ... 169

VIDEO SEVEN
1024i 256K/512K ... 145/165
VRAM II 1MB ... 339

III SOFTWARE

ADOBE
Complete Type Library ... call
Illustrator 4.0 for Windows ... 360/359
Plus Pack for Mac / Windows ... 119
Postscript Cartridge for HP II ... 239
Type Cartridge 1: Display Faces ... 99
Type Cartridge 2: Best Sellers ... 99
Streamline for Windows ... 125
Type Align for Windows ... 63
Type Manager for Windows ... 59
Type Set 1/2/3 for Windows ... 65/65/129
Type Set: Invitations & Awards ... 87
Type Set: Letter, Memos & Faxes ... 87
Type Set: Overheads & Slides ... 87
Type Set: Spreadsheets & Graphs ... 87

BORLAND
C++ Professional 3.0 for Windows ... 295
C++ 3.0 for Windows & Application Frameworks . 465
dBase IV 1.5 ... 469
Paradox 3.5 ... 445
Quattro Pro 3.0 (special clearance ... 195
Screenery (Windows wallpaper screen saver) ... 25
Turbo C++ for Dos ... 63
Turbo C++ for Windows ... 99
Turbo Debugger & Tools 2.0 ... 99
Turbo Pascal for Windows ... 119

MICROSOFT
DOS 3.3 / 4.01 / 5.0 ... 59/29/59
DOS 4.01 w/ Windows ... 74
DOS 5.0 w/ Windows ... 105
Entertainment Pack for Windows I / II / III ... 28
Excel 4.0 for Windows ... 299
Flight Simulator ... 39
Joystick Warrior 5 ... 14.50
Maxx Control Yoke (IBM) ... 49
Maxx Pedals (IBM) ... 39
Microsoft C 7.0 ... 299
Microsoft C & Quick C for Win & SDK ... 465
Money for Windows ... 49
Multimedia Development Kit ... 299
Office for Win(Excel, Word, Power Point, Mail) ... 449
PC Mail Server for DOS & Windows ... 435
Power Point for Windows ... 299
Project for Windows 1.0 ... 419
Publisher for Windows ... 125
Quick Basic Compiler 4.5 ... 62
Quick C for DOS / Windows ... 69/125
Quick C Compiler w/ Quick Assembler ... 125
Software Development Kit 3.0 (SDK) ... 305
Visual Basic for Windows ... 125
Windows 3.0 ... 45
Windows 3 Device Driver Development Kit ... 305
Word for DOS / Windows ... 207/279
Word for Windows upgrade to v2.0 ... 125
Works for DOS / Windows ... 95/125

SANTA CRUZ OPERATIONS (SCO)
SCO C++ ... 915
SCO ODT Personal System 1.1 ... 1170
SCO ODT Personal System 1.1.1 (tape) ... 1086
SCO Multiview 386 1.6.1 ... 299
SCO XENIX-NET 386 single server v1.3.0 ... 685
UNIX 386 Dev Sys 3.2.2 C-Compiler & Dev Tools . 995
UNIX 386 GT Oper Sys 3.2.2 Multiuser ... 995
XENIX 386 Dev Sys 2.3.1 C-Compiler& Dev Tools . 610
XENIX 386 GT Oper Sys 2.3.4 ... 455

VENTURA SOFTWARE
Educational administrative, student, faculty and educational institutions special
Ventura Publisher 3.0 Gold Series
DOS / Windows / Mac ... 199

WORDPERFECT
DataPerfect ... 265
DrawPerfect ... 265
Figure Library (Bus/Edu/Flg/Holiday/Leisure) . 79 each
LetterPerfect ... 115
PlanPerfect ... 235
WordPerfect 5.1 for DOS ... 245
WordPerfect 5.1 for Windows ... 250
WordPerfect 5.1 for Windows (bought w/ system) . 200
WordPerfect Trade up (from DOS to Win) ... 75
WordPerfect Executive / Office ... 145/95

OTHERS
3-D Charts to Go! ... 52
After Dark for Windows (screen saver) ... 29
Aldus Freehand 3.0 for Windows ... 379
PageMaker 4.0 for Windows ... 469
Persuasion 2.1 for Windows ... 325
Photostyler 1.1 for Windows ... 505
Automap (road atlas) ... 46
Carbon Copy Plus 6.0 ... 109
Carbon Copy for Windows ... 112
Central Point Anti-virus / Backup 6.0 ... 53/50
PC Tools 7.1 w/ Anti-virus ... 99
Check-it ... 85
Claris Hollywood for Windows ... 312
Clipper 5.01 ... 479
Corel Draw 2.0 ... 349
Correct Grammer for DOS/Windows ... 49/59
DR DOS 6.0 ... 68
Definition Plus! (American Heritage Dict.) ... 59
Direct Access 5.1 ... 63
Fastback Plus 3.04 ... 117
Fax Grabbler w/ Norton Desktop for Win ... 99
Fox Pro 2.0 ... 459
Geoworks Pro ... 122
Grammatik IV for DOS / Windows ... 57
hDC Windows Express ... 55
HP New Wave 3.0 ... 104
Hardvard Graphics 3.0 for Windows ... 375
Intermission for Win (screen saver) ... 29
LapLink Pro v4 ... 89
Lotus 1-2-3 for Windows ... 389
1-2-3 Rel 2.3 for DOS ... 315
1-2-3 Rel 3.1+ for DOS ... 379
Ami Pro for Windows ... 279
MacPrint ... 85
More Fonts / Display Faces ... 77
Multimate 4.0 ... 235
Norton Anti-virus ... 85
Back Up for DOS & Windows ... 83
Desktop for Windows ... 89
Utilities 6.01 ... 112
PC Anywhere 4.5 Remote and Host ... 115
PFS: First Choice (w/ Prodigy start-up kit) ... 79
Pacioli 2000 ... 24
Personal Law Firm ... 55
Pro-scan (virus identifier & remover) ... 40
Procomm Plus 2.0 ... 69
Professor Windows ... 32
Quarterdeck
DesqView 286 ... 79
DesqView 386 v2.4 ... 125
Qemm 386 v6.0 ... 62
Manifest / Qram ... 41/45
Quicken for DOS/ Mac/ Windows ... 49
QuickPay (payroll) ... 39
Screen Craze ... 29
Sound Blaster / Sound Blaster Pro ... 115/199
Speaker / MIDI kit ... 29/29/59
Speedstor 6.5 ... 61
Speedstor Plus w/ SCSI controller ... 75
SpinRite II ... 60
Stacker Data Compression 2.0 ... 83
Stacker AT/16 ... 179
Superstor ... 79
The Far Side (computer calendar) ... 45
Turbo Tax Federal 1040(Final edition) DOS ... 49
Turbo Tax Federal 1040 (final edition) Win ... 59
Ventura Publisher Gold for Windows 3.0 / 4.0 . 465/489
Winfax Pro ... 72
XTree Gold 2.5 ... 89
Other educational / games software ... visit us

LASERMASTER WINJET 800
800 dpi resolution
postscript adapter
for HP II, IID, III, IIID

$855

Amiga Art And Multimedia

Exploratorium Exhibit Driven By A500; New Tools From ASDG

BY MATTHEW LEEDS

AMIGA

The Amiga community continues to amaze me. I'm sure model airplane builders and car racing buffs can tell stories about people in their circles, but I've never met a more creative and inventive group than those proud hackers who use the Amiga.

I recently spent a day at the Exploratorium, the Bay Area's science/art museum. This is a marvelous place to wander and explore, and explore I did. I found a new exhibit/artwork by artist-in-residence Toshio Iwai called "Well of Lights."

Well of Lights is a three-dimensional image sculpture in which you can view layers of moving imagery from many angles. While a description of its physical design does little to present its effect on a viewer, you'll appreciate the creative vision that it took to conceive and build this wonderful work.

The Well is a roughly circular object about 4' across. Its top is transparent; within it you see objects and images moving in a three-dimensional space. These objects change location, color, shape, and depth. They appear to be projected into space, floating unattached. The Well hums and vibrates. Overhead is what looks like the guts of a video projection system and a front surface mirror.

A closer inspection reveals what look like portholes in the sides of the Well. Looking through these reveals the first clue to the Well's construction. There appear to be several disks, each the same size as the interior diameter of the Well, inside. A close examination also shows that these disks are rotating at high speed.

I spoke with Toshio Iwai to better understand how the Well worked. He explained that its heart was an Amiga 500, driving an RGB video projector. The Well itself contained three polycarbonate plastic disks rotating at 80 RPM. Each disk had tiny intricate paper designs glued in precise patterns to its surface. By driving the video projector as a strobe light, and carefully controlling the precise direction and location of light into the Well, an effect similar to that used in a zoetrope creates the illusion of motion other than that caused by the rotation. Combining red, green, and blue light from the projector controls the color effects, the strobe rate controls the illusion of motion, and the location of light controls which paper patterns are illuminated.

You can think of the "Well of Lights" as a giant kaleidoscope that can be seen by many viewers simultaneously.

Copyright© 1992. All rights reserved. *Matthew Leeds has been involved in the high-tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.*

ASDG'S NEW ADPRO

ADPro v2.1.0, originally slated as a maintenance release, is now out. It adds many enhancements, including FRED, a frame editor providing easy batch processing and powerful animation tools. FRED helps users organize their pictures into lists called sequences. Individual frames in a sequence are represented on-screen with accurately rendered icons.

ADPro can be told to process each frame in a sequence, providing an easy method of batch processing. FRED also provides an extensible ability to call special purpose drivers which can cause ADPro to generate animation effects automatically. You can even preview animations within FRED, before committing them to a single frame recorder. FRED requires Kickstart 2.04 or later.

Also new in v2.1.0 are the roll and broadcast limit operators. The roll operator makes creating video transitions such as pushes, slides, and reveals much faster. The broadcast limit operator identifies and corrects colors which can cause playback artifacts based upon specific NTSC, PAL, or user definable standards. Both operators enhance ADPro's usefulness in the video studio.

ADPro's PREFPRINTER saver, which prints pictures with 24 bit-plane color or 8 bit-plane grayscale resolution on any printer supported by Preferences, has been augmented with eight new dithering methods. These new methods greatly enhance the quality of prints made on low-resolution black-and-white devices, such as common laser and dot matrix printers.

FILE TRANSFER WITH SPLT

ASDG has created a new IFF form to facilitate the transfer of large data files (such as images) between computers. The new form, called SPLT, has been registered with Commodore Business Machines and is available for use by other developers.

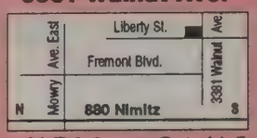
ASDG now provides programs to perform split and join operations under AmigaDOS, MS/DOS, and Microsoft Windows. These programs, distributed with ADPro 2.1.0, make it easier for ADPro owners to move large images between the Amiga and the PC. Additional split and join programs for other computers will be forthcoming, and are easily written given the SPLT specifications.

Exchanging pictures with other computers

Continued on page 254

Prior to ASDG's development of the SPLT form, images exchanged via floppy disk were limited to the capacity of a single floppy. This was because there were no split/join tools common both to the Amiga and other computers.

Fremont
3381 Walnut Ave.



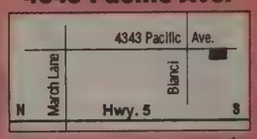
M-F 9-6 pm • Sat. 11-5

Computerland of Fremont/Stockton

(510) 794-9311
Cash prices only

(209) 473-1241
Bring ad to get these prices

Stockton
4343 Pacific Ave.



M-F 9-6 pm • Sat. 11-5
Not responsible for typographical errors

$CALL

Apple® Macintosh® Powerbook™

- Macintosh® power with notebook convenience
- Runs virtually all Macintosh® software

TOSHIBA

Toshiba T2000SX, 60MB HD	$2037
Toshiba T2000SXe, 60MB HD	CALL
Toshiba T2200SX, 40MB HD	CALL
Toshiba T2200SX, 60MB HD	CALL
Toshiba T2200SX, 80MB HD	CALL
Toshiba T3200SX, 120MB HD	CALL
Toshiba T3200SXC, Color, 120MB HD	CALL
Toshiba T3300SL, 80MB HD	CALL
T4400SX, 486SX/25MHz, LCD	CALL
T4400SX, 486SX/25MHz, Gas Plasma	CALL
Toshiba T5200, 100MB HD	CALL
Toshiba T5200C, Color 200MB HD	CALL

TOSHIBA T2000SX/40 **BEST PRICE**

- Toshiba's most powerful notebook computer
- High performance —386SX™ processor
- Super ergonomics —only 6.9 lbs.

NEC

MultiSync color monitor ..... CALL

MACINTOSH

Authorized Dealer

Mac Classic II, 2/40 MB HD	$1063
Mac Classic II, 4/40 MB HD	$1181
Mac Classic II, 4/80 MB HD	$1299
Mac LC, 4/40 MB HD	$1338
Mac LC, 4/80 MB HD	$1615
Mac IIsi, 3/40 MB HD	$1870
Mac IIsi, 5/80 MB HD	$2263
Mac IIci, 5 RAM, 1 floppy	$2467
Mac IIci, 5/80 MB HD	$2999
Mac IIfx, 4 RAM, 1 floppy	$3645
Mac IIfx, 4/80 MB HD	$4183
Mac IIfx, 4/160 MB HD	$4616
Mac Quadra 700, 4MB RAM	$4115
Mac Quadra 700, 4/80MB HD	$4658
Mac Quadra 700, 4/160MB HD	$5099
Mac Quadra 700, 4/400MB HD	$5504
Mac Quadra 900, 4MB RAM	$5193
PowerBook 100, w/ext. floppy	$1560
PowerBook 140, 2/20 MB HD	$2284
PowerBook 140, 2/40 MB HD	$2543
PowerBook 140, 4/40 MB HD	$2782
PowerBook 170, 4/40 MB HD	$CALL

Available from the Stockton store

OKIDATA

Okidata ML 320	$299
Okidata ML 321	$419
Okidata ML 380	$249
Okidata ML 390 Plus	$419
Okidata ML 391 Plus	$589
OkiLaser 400	$585
OkiLaser 800, 8ppm, 512K	$899
OkiLaser 820, 8ppm, Scalable fonts	CALL
OkiLaser 830, 8ppm, Postscript, 2MB	$1245
OkiLaser 840, 8ppm, Postscript	$CALL

OKIDATA

ONLY $585

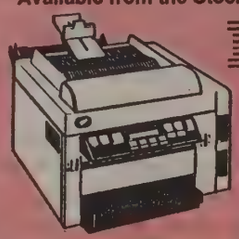
IBM

IBM Model 35SX,NO HD	$1228
IBM Model 40SX, 40MB HD	$1679
IBM Model 40SX, 80MB HD	$1877
IBM Model 55SX, 40MB HD	$1712
IBM Model 55SX, 80MB HD	$1910
IBM Model 57SX, 80MB HD	$2548
IBM Model 57SX, 160MB HD	$2944
IBM Model 70-081, 80MB HD	$2306
IBM Model 70-161, 160MB HD	$2691
IBM Model 70-A16, 160MB HD	$3602
L40 Notebook, 2MB RAM, 60MB HD	$2058

IBM PRINTERS

Personal Printer Series II model 2380	$313
Personal Printer Series II model 2381	$438
Personal Printer Series II model 2390	$313
Personal Printer Series II model 2391	$438
IBM Laserprinter E	$954
IBM Laserprinter 4019	$CALL
IBM Laserprinter 4029 Model 5E	$1035
IBM Laserprinter 4029 Model 6	$1313
IBM Laserprinter 4029 Model 10	$1580
IBM Laserprinter 4029 Model 10L	$2042

Available from the Stockton store



IBM Business Partner
Authorized Advanced Products Dealer

Novell Authorized Reseller™

NetWare 2.2:
5, 10, 50, 100 Users
NetWare 386 v3.11:
10, 20, 100, 250 Users

Call for Netware prices

COMPAQ

DeskPro 386/25M, 1 floppy	$2386
DeskPro 386/25M, 60MB HD	$2770
DeskPro 386/25M, 120MB HD	$3078
DeskPro 486S/16M, 1 floppy	$2463
DeskPro 486S/16M, 60MB HD	$2847
DeskPro 486S/16M, 120MB HD	$3155
DeskPro 486S/25M, 1 floppy	$2847
DeskPro 486S/25M, 60MB HD	$3232
DeskPro 486S/25M, 120MB HD	$3540
DeskPro 486/33M, 1 floppy	$3695
DeskPro 486/33M, 120MB HD	$4388
DeskPro 486/33M, 340MB HD	$5543

COMPAQ SLT LAPTOP
40MB Hard Drive

$899 Battery Not Included

Compaq LTE 386S/20, 30MB HD	$CALL
Compaq LTE 386S/20, 60MB HD	$CALL

Available from the Stockton store

HEWLETT-PACKARD

DeskJet 500	$CALL
DeskJet 500C, Color, 300dpi	$679
LaserJet IIP Plus	$785
LaserJet IIP Postscript, 1.5MB	$CALL
LaserJet IIIP 1MB RAM	$CALL
LaserJet IIIP Postscript, AppleTlk	$1569
LaserJet III	$1499
LaserJet III Postscript, AppleTlk	$1979
LaserJet IIID	$2295
PaintJet	$629

PRINTERS FOR MACINTOSH

HP DeskWriter	$385
HP DeskWriter C, color	$679
HP LaserJet IIIP Postscript, AppleTlk	$1569
LaserJet III Postscript, AppleTlk	$2099
Apple StyleWriter	$CALL
Personal LaserWriter LS	$CALL
Personal LaserWriter NT	$CALL
LaserWriter IIf	$CALL
LaserWriter IIg	$CALL

CLEARANCE CLEARANCE CLEARANCE CLEARANCE CLEARANCE

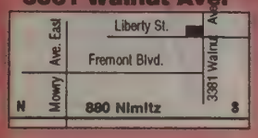
NEC 286 Laptop 20MB	$899
NEC ProSpeed 386SX Color Portable	1899
Toshiba T5200/100 MB	Best Price
HP III/IIID Appletalk Interface	95
IBM 40 19E Printer	799
NEC 4Ds Monitor	$699
NEC 3D Monitor	449
NEC 2A Monitor	299

EPSON PRINTER BLOW OUT SALE ON DEMO UNITS!

EPSON FX 1050	$299
EPSON LQ 1050	399

Computerland of Fremont/Stockton

Fremont
3381 Walnut Ave.



M-F 9-6 pm • Sat. 11-5

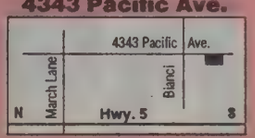
(510) 794-9311

Prices subject to change

(209) 473-1241

Bring ad to get these prices

Stockton
4343 Pacific Ave.



M-F 9-6 pm • Sat. 11-5

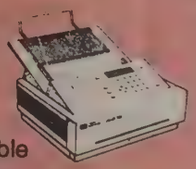
Not responsible for typographical errors

HEWLETT PACKARD *Authorized Dealer*

HEWLETT PACKARD *Authorized Dealer*

HEWLETT PACKARD *Authorized Dealer*

HP Plain Paper FAX



- Signature quality
- Send multiple files off of dialer
- 256K memory
- 1MB RAM upgradeable
- Scalable fonts built-in
- Requires LaserJet Printer

$849

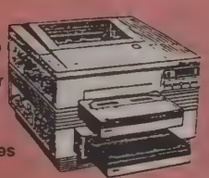
HP FAX 300 Built-in Printer

- Uses Bond Paper
- 300dpi output
- Sequential broadcast

$CALL

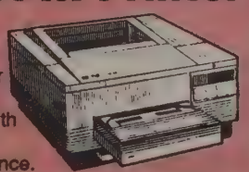
LaserJet IIID Printer

HEWLETT PACKARD *Authorized Dealer*



- Advanced paper-handling
- Resolution enhancement for the best 300-dpi printing
- Ideal for high-volume, multi-user environments
- Wide variety of easy-to-use, scalable, built-in typefaces
- Optional envelope feeder handles 50 envelopes

HP LaserJet III Printer



Now, Hewlett-Packard LaserJet Printers are PC or Macintosh compatible.
AppleTalk compatibility with optional interface.
Dependable HP performance.

The HP Vectra 386/25 PC

- 25MHz, 386™-based processor
- 2MB RAM standard, exp.to 32MB
- 32KB cache memory architecture

$CALL

PC MAGAZINE EDITORS' CHOICE

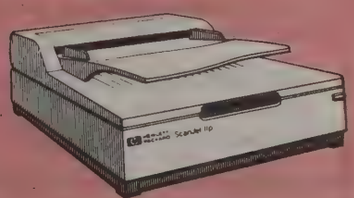
HP Laserjet IIIsi

Your network solution from Hewlett Packard available for PC and Macintosh

CALL OR COME IN FOR DEMO

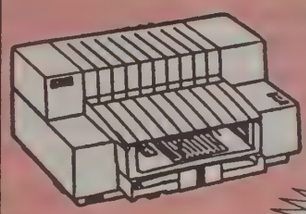
ScanJet IIP

NEW



Extremely Affordable

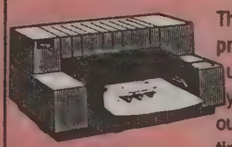
HP DeskWriter Printer



- Affordable laser-quality output for Macintosh®.
- Fits on your desk.

Low Price Only $385

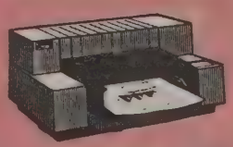
HP DeskWriter C Printer For Macintosh



This color printer is ideal if you want primarily black output, but are eager to use up to 16.7 million colors and greyscale in your communications. Its 300 dpi color output rivals that of printers costing three times as much, plus it is networkable and prints on plain paper. Built-in print spooling plus Hewlett-Packard's dependable 3 year warranty.

$679

HP DeskJet 500 C Color Printer

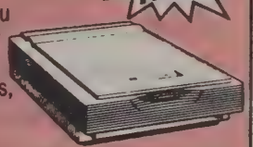


Affordable laser-quality printing with 300 dpi color output. Prints on plain paper and transparencies.
3-year limited warranty

Only $679

HP ScanJet IIc

NEW



The new HP ScanJet IIc gives you 256 levels of gray or 24-bit color professional quality documents. Supports IBM AT-compatible PCs, MicroChannel or Macintosh personal computers

HP 1MB RAM Only $79

RESOURCES

Calendar Of Events

APRIL

April 10 Intro To Quattro Pro Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

April 11 Build & Upgrade An IBM PC Clone Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

April 11 Computer Mart. Cupertino. De Anza College Special Events. Call: (408)864-8350.

April 11 Computer Show & Sale. San Francisco Cow Palace. Richard James Corp. Call: 1-800-533-7220. BBS: (415)464-6408.

April 12 Computer Show & Sale. Concord. MarketPro. Call: (415)388-8893.

April 12–14 Silicon Graphics Expo: A New Dimension In Visual Computing. Santa Clara. Publications & Communications, Inc. Call: 1-800-727-EXPO.

April 12–15 Second International Languages Developers Conference. Monterey. Borland International. Call: CT Meeting Planners 1-800-942-8872 or (203)261-6227.

April 13 WordPerfect 5.1 Desktop Publishing Class. San Ramon. MicroTek Education Center. Call: (510)831-8075.

April 13–14 4th Dimension: Advanced Features Class. San Jose. Abacus Training. Call: (415)759-2481.

April 13–14 Troubleshooting Internetworks Class. San Francisco. Data-Tech Institute. Call: (201)478-5400.

April 13–15 New Architectures For Enterprise Computing Seminar. San Francisco. Technology Transfer Institute. Call: (310)394-8305.

April 14 DrawPerfect 1.1 Class. San Ramon. MicroTek Education Center. Call: (510)831-8075.

April 14 Intro To Paradox Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

April 15 Intermediate Microsoft Word For The Macintosh Class. San Jose. Abacus Training. Call: (415)759-2481.

April 15 WordPerfect 5.1 Macros Class. San Ramon. MicroTek Education Center. Call: (510)831-8075.

April 15 WordPerfect For The Legal Profession Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

April 16 Accounting Systems Seminar: Tax And Managerial Reporting. Oakland. David Simon, CPA. Call: (510)893-5753.

April 16 Advanced NetWare v2.2 System Manager Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

April 16 FileMaker Pro Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

April 17–18 PC LAN: Operation And Management Workshop. Berkeley. UC Berkeley Extension. Call: (415)323-8141.

April 18 Computer Show & Sale. Cal Expo, Sacramento. MarketPro. Call: (415)388-8893.

April 18 IBM PC Clone Troubleshooting And Repair I Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

April 18–May 22 Intro To PC Telecommunications Course. Alameda. College of Alameda and CSCA. Call: George, (510)523-2454. CompuServe: 71121,3406.

April 20 Intro To The Macintosh System 7 Class. San Francisco. Abacus Training. Call: (415)759-2481.

April 20–21 Discover OOP With Clipper 5 Class. San Francisco. Island Publishing. Call: (208)667-3727.

April 21 Beginning Microsoft Word For The Macintosh Class. San Francisco. Abacus Training. Call: (415)759-2481.

April 21 Excel Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

April 21 Intro To HyperCard Class. San Francisco. Abacus Training. Call: (415)759-2481.

April 21 Intro To Word For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

April 21–23 The Fourth Annual Monterey Software Conference: Business Process Reengineering Smart Software For The Smart Enterprise. Monterey. Digital Consulting. Call: (508)470-3880. Priority code: L3VNXX.

April 22 Intro To Excel For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

April 22 MacWrite II For The Macintosh Class. San Jose. Abacus Training. Call: (415)759-2481.

April 22 Wireless LAN Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

April 22 WordPerfect 5.1 Level 1 Class. San Francisco. Abacus Training. Call: (415)759-

Continued

APRIL 12–14

SILICON GRAPHICS EXPO

Santa Clara Convention Center

Silicon Graphics EXPO is the first computer trade show committed to the Silicon Graphics user community. Ed McCraken, President and CEO, has been slated as one of the keynote speakers. This expo will feature technical presentations and tutorials, in addition to products from Silicon Graphics and third-party vendors. Call: 1-800-727-EXPO.

APRIL 23

UNIX: PAST, PRESENT, AND FUTURE

Santa Clara

Stephen R. Bourne, creator of the Bourne shell, will talk about the history of UNIX, why the shell was written, the challenges facing UNIX in the '90s, and the impact of the SVR4 transition. Bourne is currently responsible for Sun Microsystems' new Solaris 2.0 Operating System. This presentation is part of UCSC Extension and Computer Literacy Bookshop Emerging Technology Lecture Series. Santa Clara Convention Center, 2nd Fl., 7:00–8:30 pm, $10. Call: Computer Literacy Bookshop, (408)435-5015.

The Super Link —Since 1986

TSL MINI SLIM SYSTEM
* ONLY 8.1 LB , 11"x11"x2"

$439

FEATURES:
* 386SX-25MHz Motherboard
* 1MB RAM exp. to 16MB
* SLIM CASE w/ Power Supply
* 3.5" 1.44MB FDD
* I/O CARD, 2S/1P
* IDE 2FD/2HD Controller

286-16MHz w/ SAME FEATURES $339

OPTIONS:
* SVGA CARD W/ 1MB
* MGP CARD
* 40/80/120MB HDD
* MODEM

Micronics NOTEBOOK
(EVEREX TEMPO IDENTICAL)
* ONLY 7 LB

$1,699

FEATURES:
* 386SX-20MHz
* 1MB RAM exp. to 5MB
* 60MB Hard Disk Drive
* 3.5" 1.44MB Floppy Drive
* VGA Monitor
* Carrying Case
* DOS 5.0

OPTIONS:
* 40MB HARD DISK DRIVE
* 3MB RAM or 5MB RAM
* MODEM

17" SVGA MONITOR!! $895
* Capetronics OEM
* 1280 x 1024
* Non-interlaced
* 0.26 d.p.
* Programmable Memory: retain up to 14 display modes.

NEC 5FG OEM 17".....$1295

NEC 3D 14" $495

ORCHID Fahrenheit
* 1MB
*1280 x 1024 $299

SPECIAL OF THE MONTH!!
FUJITSU 101 Keyboards:
4700.....$47
4850.....$39

BLACK *Case, Keyboard, Monitor available. Call for more information!*

BASIC SYSTEMS:
Features:
* Baby AT or Mini Tower Case w/ 200W Power
* 1MB RAM
* 1.2 or 1.44 Floppy Dr.
* 2 Serial Ports
* 1 Parallel Port FREE MOUSE
* 1 Game Port
* 101 AT Keyboard
* IDE Controller (2F/2H)

486-33MHz, 64K CACHE.....$799
386-40MHz, 64K CACHE.....$509
386-33MHz, 64K CACHE.....$499
386-25MHz, no CACHE.....$439
386SX-25MHz, no CACHE $369

MOTHERBOARD
EISA 486-50MHz 256K Cache no CPU.....$915
EISA 486-33MHz 256K Cache no CPU.....$789
486-50MHz ISA 64K Cache no CPU, OPTI chip.....$195
486-33MHz ISA 64K Cache no CPU.....$175
386-40MHz w/ 64K Cache, RAM exp. 32MB no CPU...$169
386-33MHz w/64K Cache, RAM exp. 32MB, no CPU...$165
386-25MHz no Cache, no CPU.....$105
386SX-25MHz.....$145
VLSI 286-16MHz, exp 4MB.....$95
** Call for current CPU price.

MADE IN U.S.A. MICRONICS MOTHERBOARD
486-33MHz EISA II, w/ 64K CACHE, w/ FDD Controller, w/ I/O, ...call
486-33MHz ISA-G4 w/64K CACHE.....call
486SX-20MHz, no CACHE, ...call
386-33MHz w/ 64K CACHE.....call
386-20MHz w/1MB no CPU...$89
386SX-25, no CACHE.....call
386SX-20, no CACHE.....call

CASE
Baby AT IW-5.....$45
Baby AT w/ 200W.....$59
Full Tower, 9 Bays, w/ Door, 230WUL.....$118
Full Tower 367P, 8 Bays, 230W, 6 Opens.....$125
Full Tower 10 Bays, 230W.....$165
Full Tower GT-300, 12 Slots, Double Fan 230W.....$169
300W.....$215
Mid Tower, 8 Bays, 230W UL.....$109
Mini Tower w/ 200W.....$59

POWER SUPPLY
230W Full size.....$49
200W XT size UL.....$52
PS-2 200W.....$42
230W for Tower.....$45
250W for Tower.....$65
300W for Tower.....$85
PS-2 230W UL.....$52
UPS-550 Uninterruptible Power System.....$225

CONTROLLER
IDE 4F/2H/2S/1P/cable.....$42
IDE 4F/2H/cable.....$34
IDE 2F/2H/2S/1P/G/cable...$29
IDE 2F/2H/cable.....$16
KW530D 2FD/ cable.....$29
DTC 3280.....$115

HARD DRIVE
IDE
40MB 25ms.....$190
60MB 19ms.....$239
80MB 19ms.....$305
120MB 18ms.....$345
170MB 17ms.....$465
340MB Maxtor.....$895

SCSI
120MB.....$345
200MB.....$565

MONITOR
12" Amber.....$79
14" VGA $215
WEN SVGA 14" 0.28 d.p.....$269
CTX Super VGA 14" 0.28 d.p.....$299
ViewSonic 4E VGA 14" 0.28 d.p.....$309
Viewsonic 5E N-I 14" 0.28.....$425
CTX Non-Interlaced 14" 0.28 d.p.....$339
ViewSonic 6. N-I 14" 0.28 d.p.....$365
ViewSonic 5+ N-I 14" 0.25 d.p.....$525
NEC 4FG Multi SVGA N-I 15".....$777

KEYBOARD
Keytronics 101.....$42
Maxi 101.....$37
Omni 101/102.....$65/$67
Omni Ultra.....$95
M-TEK 208.....$29
BTC 5339SX.....$29
BTC 5100 (small).....$36

VIDEO CARD
Orchid sierra w/1MB.....$179
TSENG 0 wait w/1MB 70/72Hz.....$129
TSENG w/1MB $109
TVGA w/ 1MB.....$89
TVGA w/512K.....$59
VGA.....$45
Mono/Color.....$29
MGP.....$17
Windows Acceleration.....$89

FLOPPY DRIVE
Teac 1.2MB 5.25".....$57
Teac 1.44MB 3.5".....$51
Mounting Kit.....$4
Ext. FD/HD Case.....$62

I/O CARD
AT I/O (2S/1P/1G)...$17
Printer.....$10
Clock.....$19
Serial Card.....$16
Game.....$10
KW 531 4 Serial.....$65
2 Serial/2 Parallel....$24

MOUSE & DOS
Logitech Trackman Serial/Bus.....$67/$72
Logitech Mouseman Serial/Bus.....$59/$67
MS-DOS 5.0.....$42
WINDOWS 3.0.....$42
DR. DOS 6.0.....$42
Artech AM25.....$14
Artech AM 22.....$25

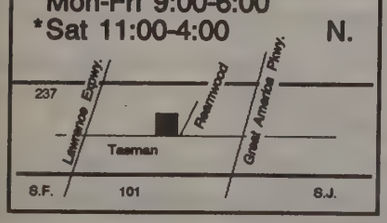
RAM**
1MB x 9, 70ns.....$32
1MB x 9, 60ns.....$37
4MB x 9, 70ns.....$129
4MB x 9, 60ns.....$145

**CASH ONLY!!

MODEM
2400/9600 Modem/Fax.....$79
2400/4800 (Zoltrix) send only Modem/Fax.....$49
2400 Modem (Zoltrix).....$42
Pocket 2400/9600 Modem/Fax.....$169

TAPE BACKUP COLORADO
JUMBO 120I int.....$199
JUMBO 250 int.....$265

NEW OFFICE HOUR
*Mon-Fri 9:00-6:00
*Sat 11:00-4:00



THE SUPER LINK
1257A TASMAN DR. SUNNYVALE, CA 94089
TEL: 408-745-1606 FAX: 408-745-1609
*Please show Picture I.D. if purchase with credit card or check.
*Prices are for cash purchase only.
*Purchase order with approved credit.
*Prices are subject to change without notice.
*Prepaid or COD Cash for Mail Order.

RT COMPUTERS

GUARANTEED CUSTOMER SATISFACTION SINCE 1988

> Computer Services, Catering To Business & Home
> All Systems- One Year Parts And Labor Warranty
> Configure And Build Custom Systems
> Tech Support You Can Understand
> Repair And Upgrade All IBM Compatibles
> Corporate & Gov't PO's Welcome

PERFECT FOR NETWORKS, AUTOCAD & WINDOWS POWER USERS!

RT 486-66* MHz 80 MB SVGA SYSTEM
- Deluxe Mid-Sized Tower Case With 200 Watt PS
- 1 Meg Memory
- 1.2 & 1.44 MB Floppy Drive
- 80 MB Hard Drive
- 2H/2F/2S/1P/1G Controller
- 101 Enhanced Keyboard
- 14" 1024x768 SVGA Monitor and 1 MB SVGA Card

$3250

* *SPRITE 486 Motherboard w/ 66 MHz Clock*

RT 486-25/33 MHz 80 MB SVGA SYSTEM WITH 256K CACHE
- Deluxe Mid-Sized Tower Case With 200 Watt PS
- 1 Meg Memory
- 1.2 & 1.44 MB Floppy Drive
- 80 MB Hard Drive
- 2H/2F/2S/1P/1G Controller
- 101 Enhanced Keyboard
- 14" 1024x768 SVGA Monitor and 1 MB SVGA Card

25 MHz $1650

33 MHz $1700

RT 386-40 MHz 80 MB SVGA SYSTEM WITH 128K CACHE
- Mini Tower Case With 200 Watt PS
- 1 Meg Memory
- 1.2 & 1.44 MB Floppy Drive
- 80 MB Hard Drive
- 2H/2F/2S/1P/1G Controller
- 101 Enhanced Keyboard
- 14" 1024x768 SVGA Monitor and 512K SVGA Card

$1275

RT 386 16/25 SX 40 MB SVGA SYSTEM
- Mini Tower Case With 200 Watt PS
- 1 Meg Memory
- 1.2 Floppy Drive
- 40 MB Hard Drive
- 2H/2F/2S/1P/1G Controller
- 101 Enhanced Keyboard
- 14" 1024x768 SVGA Monitor and 512K SVGA Card

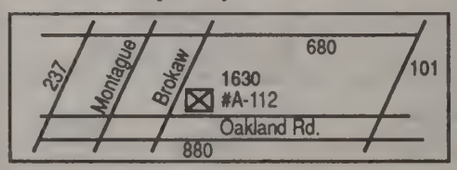
16 MHz $949

25 MHz $975

Sales • Service • Consulting
RAY TETREAULT-Owner
RT COMPUTERS

MasterCard VISA

1630 OAKLAND RD
SUITE A-112
SAN JOSE, CA 95131
(408)437-3063
Fax: (408) 437-1156



Calendar Of Events continued

2481.

April 22–24 Programming OOP With Clipper 5 Class. San Francisco. Island Publishing. Call: (208)667-3727.

April 23 Intro To DOS 5.0 Class. San Francisco. Abacus Training. Call: (415)759-2481.

April 23–24 PC Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

April 23–26 Theos BASIC Forum. Lafayette. Theos Software Corp. Call: (510)935-1118.

April 24, May 1 & 8 A First Course In PageMaker: Desktop Publishing On A Macintosh. Santa Clara. Mission College. Call: (408)748-2732.

April 25 Computer Show & Sale. Santa Clara County Fairgrounds. Richard James Corp. Call: 1-800-533-7220. BBS: (415)464-6408.

April 25 Computer Show & Sale. Solano County Fairgrounds, Vallejo. MarketPro. Call: (415)388-8893.

April 25 Emergency Data Recovery Seminar. San Francisco. SFPCUG. Call: (415)821-1310.

April 25 IBM PC Clone Troubleshooting And Repair II Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

April 25 Intro To DOS Seminar. San Francisco. SFPCUG. Call: (415)821-1310.

April 25 Network Design And Implementation Seminar. San Francisco. SFPCUG. Call: (415)821-1310.

April 26 Computer Show & Sale. Centennial Hall, Hayward. MarketPro. Call: (415)388-8893.

April 27 DECWorld '92. Boston. DEC. Call: (617)244-2800.

April 27 Macromind Director Class. San Francisco. Center for Electronic Art. Call: (415)882-7063.

April 27–29 Silicon Valley Networking Conference: The Conference On Technology, Architectures, And MIS Issues For Computer Networks. Santa Clara. SysTech Research. Call: Ken Majithia, (408)924-3930. Email: majithia@sjsuvm1.bitnet.

April 28 Advanced DOS 5.0 Class. San Francisco. Abacus Training. Call: (415)759-2481.

April 28 SF Business Computers User Group Meeting Featuring Author Fred Davis. San Francisco. SF Business Computers User Group. Call: (415)788-5338.

April 29 Intermediate Lotus 1-2-3 Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

April 29 Intro Graphics For The Mac Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

April 30 Mac Basics For MacPhobics Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

April 30 WordPerfect Desktop Publishing Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

MAY

May 2 Build & Upgrade An IBM PC Clone Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

May 2 Computer Show & Sale. Oakland Coliseum. Richard James Corp. Call: 1-800-533-7220. BBS: (415)464-6408.

May 2–3 Decisions And Implications Of Advanced Computing Symposium. Berkeley. CPSR. Call: Doug Schuler, (206)865-3832. Email: dschuler@june.cs.washington.edu.

May 3 Computer Show & Sale. Sonoma County Fairgrounds, Santa Rosa. MarketPro. Call: (415)388-8893.

May 3 System Manager v2.2 Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

May 4 PhotoShop 4 Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

May 4 Quattro Pro Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

May 5 Macromind Director 4 Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

May 5–6 LANs Seminar. San Jose. Data-Tech Institute. Call: (201)478-5400.

May 7 NetWare v3.11 OS Features And Review Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

May 8 Instructional Technologies Student Design Exhibition And Fundraiser. San Francisco. SFSU. Call: (415)585-9940.

May 9 Computer Show & Sale. San Francisco Cow Palace. Richard James Corp. Call: 1-800-533-7220. BBS: (415)464-6408.

May 9 Intro To Networks Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

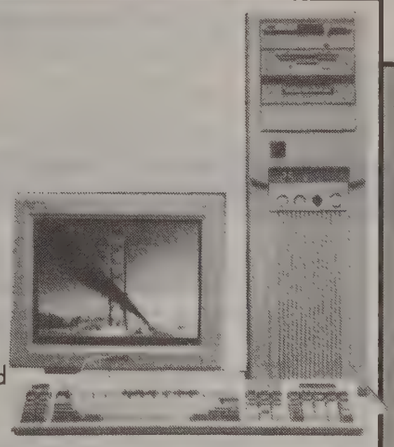
May 11 Intro To DOS Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

Continued

HIGHEST QUALITY PRODUCTS
5 YEAR SATISFACTION GUARANTEE

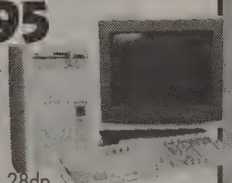
1. Professional full service with over 7 years experience.
2. 5 year labor, 1 year parts warranty.
3. Unsurpassed quality, we use only the finest components.
4. We will help install your software for 1 hour FREE!
5. 30-Day No Questions Asked money back guarantee. If you are unhappy for any reason we will refund your money. Only 10% restocking fee charged.
6. We advertise complete systems with no hidden costs to you.

CAD/GRAPHICS SYSTEM
UCS 486-33MHz 128K Cache
120MB Hard Drive
Super VGA System
$2055



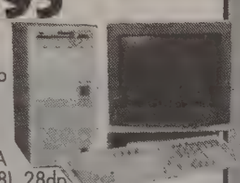
- 4MB RAM expandable to 32MB on-board
- 120MB Connor/Maxtor IDE Hard Disk
- Viewsonic 4E Super VGA color monitor (1024x768) .28dp
- Tseng Labs 1MB 16-bit VGA Card (1024x768)
- Teac 1.2 and 1.44MB floppy drive
- 1:1 interleave 2FL/HD controller
- 2 serial, 1 parallel port
- Real time clock/calendar with battery back-up
- Maxiswitch 101-key enhanced keyboard
- 3-Button Microsoft compatible mouse
- Vertical case w/200W power supply

UCS 386-33MHz
64K Cache System
120MB Hard Drive
Super VGA System
$1495



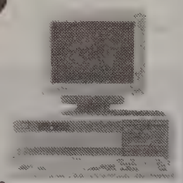
- 1MB RAM expandable to 32MB on-board
- 120MB Connor/Maxtor IDE hard disk
- Viewsonic 4E Super VGA color monitor (1024x768) .28dp
- Paradise Super VGA Card (1024x768)
- Teac 1.2 and 1.44MB floppy drives
- 1:1 interleave 2FL/HD controller
- 2 serial, 1 parallel port
- Real time clock/calendar with battery back-up
- Maxiswitch101-key enhanced keyboard
- Mini Tower case w/200W power supply
- 3-Button Microsoft compatible mouse

UCS 386-25MHz
120MB Hard Drive
Super VGA System
$1395



- 1MB RAM expandable to 16MB on-board
- 120MB Connor/Maxtor IDE hard disk
- Viewsonic 4E Super VGA color monitor (1024x768) .28dp
- Paradise Super VGA Card (1024x768)
- Teac 1.2 and 1.44MB floppy drives
- 1:1 interleave 2FL/HD controller
- 2 serial, 1 parallel port
- Real time clock/calendar with battery back-up
- Maxiswitch101-key enhanced keyboard
- 3-Button Microsoft compatible mouse
- Mini Tower case w/200W power supply

UCS 386SX-16MHz
120MB Hard Drive
Super VGA System
$1295



- 1MB RAM expandable to 8MB on-board
- 120MB Connor/Maxtor IDE hard disk
- Viewsonic 4E Super VGA color monitor (1024x768) .28dp
- Paradise Super VGA Card (1024x768)
- Teac 1.2 and 1.44MB floppy drives
- 1:1 interleave 2FL/HD controller
- 2 serial, 1 parallel port
- Real time clock/calendar with battery back-up
- Maxiswitch 101-key enhanced keyboard
- 3-Button Microsoft compatible mouse
- AT case w/200W power supply

ADD-ONS & OPTIONS

14" Amber Monitor	$90
VGA Color Monitor	240
Super VGA Color Monitor	310
Sony CD-ROM (w/Cables)	395
Colorado 120MB Tape Back-up	275
Colorado 250MB Tape Back-up	335
Tseng Lab VGA Card w/1MB	125
Maxtor 338MB ESDI Hard Drive	CALL
Maxtor 676MB ESDI Hard Drive	CALL

SMALL BUSINESS NETWORKS
We are dedicated to your needs, custom configurations available on all networks

486 File Server + Three Work Stations
- 486-33 processor
- 200MB 19ms hard disk
- 4MB RAM
- 1.2MB floppy drive
- Ethernet card
- 14" mono monitor
- 386SX-16 processor
- 1MB RAM
- Ethernet adapter
- 16-bit VGA card
- 14" mono monitor

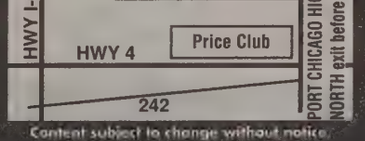
Available
NOVELL.
LANtastic®

$5999 Novell Network 2.2 Upgradable System

FREE DELIVERY IN 510 AREA CODE

United Computer Systems
5056 Commercial Circle, Unit C
Northpoint Business Park, Concord, CA 94520
Tel: (510) 825-1887 Fax: (510) 825-3889
Hours: Mon-Fri 10-6 Sat 10-5 Est. 1990

MasterCard VISA



Trademarks are registered by the respective companies
Content subject to change without notice, not responsible for typographical errors.

Calendar Of Events continued

May 11 Quark Intensive 1 Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

May 11–13 Managing The Migration To Client-Server Architectures Seminar. San Francisco. Technology Transfer Institute. Call: (310)394-8305.

May 12–13 PC Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

May 13 Computers In The Search For Public Health Workshop. San Francisco. UCSF. Call: Terry Olesen Hermes, (415)759-9929.

May 13 Intro To Paradox Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

May 14 Excel Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

May 14–15 Advanced Data Communications Class. San Francisco. Data-Tech Institute. Call: (201)478-5400.

May 16 Build & Upgrade An IBM PC Clone Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

May 16 Computer Mart. Cupertino. De Anza College Special Events. Call: (408)864-8350.

May 16 Computer Show & Sale. Santa Clara County Fairgrounds. Richard James Corp. Call: 1-800-533-7220. BBS: (415)464-6408.

May 16 Computer Show & Sale. Solano County Fairgrounds, Vallejo. MarketPro. Call: (415)388-8893.

May 16 Intermediate Mac Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

May 16–30 Principles Of Animation Class. San Francisco. Center for Electronic Art. Call: (415)882-7063.

May 17 Computer Show & Sale. Centennial Hall, Hayward. MarketPro. Call: (415)388-8893.

May 18–20 Entrepreneurial Technology Transfer Conference And Expo: The Critical Success Factors For Intra- And Entrepreneurs. San Francisco. MIT Enterprise Forum. Call: (617)862-0397.

May 19 Microsoft Word For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

May 19–20 Fifth Annual International Quality Week Conference. San Francisco. Software Research, Inc. Call: 1-800-942-SOFT. Email: qw@soft.com.

May 19–21 Analyzing User Requirements

Continued

MAY 2–3

DIAC-92 SYMPOSIUM

University of California, Berkeley

The DIAC—Directions and Implications of Advanced Computing—Symposia, sponsored by Computer Professionals for Social Responsibility, are biannual explorations of the social implications of computing. The fourth DIAC Symposium offers insights on computer networks, computers in the workplace, national R&D, and many other topics. Registration fee is $50 for both days; $30 for single day. Student registration is half price. Call: Judy Stern, (510)652-8362.

MarketPro Computer Shows

The COMPUTER SUPERSTORE

At Your Door

All Shows 10am to 5pm Adm. $6 FREE W/Membership

SAVE TIME & MONEY AT OUR COMPUTER SHOWS

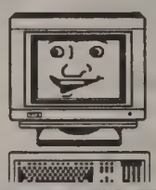
Our SUPERSTORE 1992 Show Schedule

All shows Sat. *Sun. Where noted

- * Apr. 12 - CONCORD *Sheraton Hotel*
- Apr. 18 - SACRAMENTO *Cal Expo*
- Apr. 25 - VALLEJO *Solano Co. Fairgrounds*
- * Apr. 26 - HAYWARD *Centennial Hall*
- * May 3 - SANTA ROSA *Sonoma Co. Fairgrounds*
- May 16 - VALLEJO *Solano Co. Fairgrounds*

HARDWARE, SOFTWARE, & PERIPHERALS

1,000's of the Hottest's Computer Products - UP TO 90% OFF



1 Year Membership $25 - 2 Year Membership $35

Membership entitles you to FREE Admission for 1 or 2 yrs. to over 80 shows a yr, in CA.,

We Beat Other Superstore Prices !

Disketts from $.29 ea. DS/DD - Software From $3

- MS-Word upgrade..... $119
- Norton Desktop..... $91
- Falcon 3.0..... $40
- The Farside Calender.... $49
- Word Perfect upgrade to Windows..... $77
- QEMM 386..... $59
- Stacker..... $79

For all Your Computer Forms, Stationary, & Supplies, Call For *A FREE Brochure* (415)388-8893

MarketPro Shows P.O. Box 767 Larkspur, CA 94977 (415)388-8893

Don't Pay Retail Prices For Your Computer Needs!

PC CARE

CALL (408) 727-1955
WE CARE FOR YOUR PC!

SYSTEM	BASIC SYSTEM	BASIC +40 MB HD +SVGA	BASIC +120 MB HD +SVGA	BASIC +200 MB HD +SVGA
486-50/64K	$1278	$1944	$2094	$2294
486-33C	780	1346	1496	1696
486-25C	728	1288	1438	1638
486SX-20	579	1138	1288	1488
386-40/64K	538	1098	1248	1448
386-33/64K	528	1088	1238	1438
386-25/64K	498	1058	1208	1408
386-25	448	1008	1158	1358

MONTHLY SPECIAL

$780

486-33 MHz w/64K CACHE

- 1 MB Expandable to 32 MB On Board
- 8K Internal Cache
- 64K External Cache
- Landmark= 152
- Shadow RAM
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Internal HD/FD Controller
- 2 Serial/ 1 Parallel Ports
- Tower or Desktop Case w/Power Supply
- 101 Enhanced Keyboard
- Supports MS/DOS, OS/2, UNIX, XENIX

486/386 Basic Systems Include

- Motherboard & CPU
- 1.2 MB Floppy Drive
- 2S/1P/1G Ports
- 1 MB RAM Installed
- Internal Clock/Calendar
- AT Case + 200W P.S.
- IDE 1:1 2HD/2FD Controller
- Math Coprocessor Socket
- 101 Key Enhanced Keyboard

MOTHERBOARDS

486-50/64K	CALL
486-33/64K	$635
386-40/64K	350
386-33/64K	340
386-25	268
386SX-25	180
386SX-20	170
286-16	75

SIMM MEMORY

CALL FOR LATEST PRICES

SVGA MONITORS

SVGA (1024x768) .28	$275
NEC 3FG	650
NEC 4FG	795
SONY 1304 (1024x768) .26	570

HARD DRIVES

CONNER IDE	
120M CP-30104 (18ms)	CALL
210M CP-3204F (16ms)	CALL
MAXTOR IDE	
120M XT-7120A (15ms)	CALL
200M XT-200A (15ms)	CALL

FLOPPY DISK DRIVE

TEAC 1.2M 5 1/4"	$58
TEAC 1.44M 3 1/2"	54

KEYBOARDS

KEYTRONICS 101 KEYS	$45
MAXISWITCH	35

MISCELLANEOUS

MS COMPATIBLE MOUSE	$20
DOS 5.0	50
WINDOWS 3.0 w/MOUSE	60

VGA CARDS

TSENG LAB ET 4000	99
TRIDENT 8900/1M	78
TRIDENT 9000/512K	60

CASE

MINI-TOWER w/200W	$70
MID-TOWER w/220W	99
FULL-TOWER w/250W	130
DESK-TOP w/220W	75

MODEM

GVC 9600 MODEM	
INTERNAL	$199
EXTERNAL	269

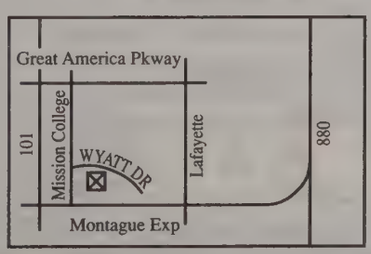
TEL: (408) 727-1955 **FAX: (408) 727-1957**

PC CARE

1800 WYATT DRIVE, SUITE #5
SANTA CLARA, CA 95054

- ❑One Year Warranty/Parts & Labor For Systems
- Δ Knowledgable Technical Support Engineers In Service
- Δ Prices & Availability Subject To Change w/o Notice
- Shipping, Insurance & COD Charges Are Extra & Non-Refundable
- Not Responsible For Typo Errors
- Hours: M-F 9am-6:30pm SAT 10am-4pm

SINCE 1987



Calendar Of Events continued

Seminar. San Francisco. DCI. Call: (508)470-3880.

May 19–June 2 Oasis Class. San Francisco. Center for Electronic Art. Call: (415)882-7063.

May 20–21 Windows 3.0 & 3.1 Class. San Francisco. Data-Tech Institute. Call: (201)478-5400.

May 21 Accounting Systems Seminar: Tax And Managerial Reporting. Oakland. David Simon, CPA. Call: (510)893-5753.

May 21 Intro To WordPerfect For Windows Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

May 21–23 Desktop Video '92 Expo. Hyatt Regency Burlingame. Ami Expo, Inc. Call: 1-800-332-6442.

May 22 Wireless LAN Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

May 23 IBM PC Clone Troubleshooting And Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

May 26 WordPerfect Desktop Publishing Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

May 27 Intermediate Lotus 1-2-3 Class. Walnut Creek. Computer Education Center. Call: (510)937-2566.

May 28 Intro To Data Communications Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

May 28–29 QuickTime: The Conference & Film Festival. San Francisco. MacWorld Communications. Call: (415)267-1745.

May 30 Advanced IBM PC Clone Troubleshooting And Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

May 30 Mac Basics Class. San Francisco. Media Alliance Computer Access. Call: (415)771-7133.

May 31–June 6 Borland's Database Conference. Palm Desert. Borland. Call: 1-800-942-8872.

JUNE

June 1–3 Collaboration '92 Conference: Exploring The Intersection Of Corporate Culture And Information Technology. San Francisco. The Graphics Communications Assoc. Call: (703)519-8160. Email: mern@well.sf.ca.us.

June 1–3 PageMaker Conference And Exposition. Seattle. Aldus. Call: Kim Foster, 1-800-221-3806.

June 1–4 Pen Computing Conference. Santa Clara. Boston University. Call: (508)649-9731, ext. 248.

June 6 Build & Upgrade An IBM PC Clone Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

June 6 Computer Show & Sale. Oakland Coliseum. Richard James Corp. Call: 1-800-533-7220. BBS: (415)464-6408.

June 8–10 Securing Your Networks Conference. San Antonio, TX. Computer Security Institute. Call: (415)905-2626.

June 8–12 USENIX Summer 1992 Technical Conference. San Antonio. USENIX Assoc. Call: (714)588-8649.

June 9–11 Netucon '92: A NetWare Users

Continued

High Performance Systems
At The Price You Wanted

486-50 MHz, 256KB Cache.....$1375
486-33 MHz, 64KB Cache.....$889
386-40 MHz, 64KB Cache.....$595
386-33 MHz, 64KB Cache.....$569
386-25 MHz, 0KB Cache.....$449
286-12/16 MHz $339
Basic Configuration: 1MB RAM, 1.2 MB FD, IDE Controller, 2S/1P/1G, Case & 101 KB

Monthly Specials:
Philips MultiMedia PC $1999
Lotus 123 w/AmiPro Upgrade 199

Hard Drives:
40 MB IDE $215
80 MB IDE .....CALL
120 MB IDE .....CALL
200 MB IDE 595
360 MB SCSI 1099

VGA Card/Monitors:
Oak 512KB $51
Trident 1 MB 95
SVGA 14" Monitor 299
NEC 14" 3FG .....CALL
Sony 1304 579

Printers:
Citizen GSX130/140 $245/299
Epson (all models) .....$CALL
HP Laserjet III/IIIP .....$CALL
NEC PostScript 90 .....$BEST

Software:
WordPerfect 5.1 .....$255
Windows 3.0 93
MS Word 249
Lotus .....CALL

Laptops & Systems:
AST, ACER, ALR .....$CALL
EVEREX, IBM, COMPAQ .....$CALL
Toshiba (all models) .....$BEST
ALR 386SX Notebook (1MB, 20 MB, 1.44MB) $1195
ALR 386SX Notebook (40 MB, 1.44, VGA) $1495

Add Ons
Tape Backup int/ext .....$CALL
CD ROM 569
101 enhanced keyboard 48
9600/2400 baud fax/modem 96
Logitech Mouse 49
Sound Blaster Pro .....$CALL
Summasketch 1201 345
Network Adapters .....$CALL

AUTHORIZED DEALER FOR AST, ALPS, ACER, COMPAQ, NOVELL, WYSE, MS

A & A Computers Inc.

Hours: Mon-Fri 8am-5:30pm Saturday 9am-12pm
2000 Wyatt Drive, Ste 5 (408) 748-8533
Santa Clara, Ca 95054 Fax: (408) 748-8539

NOTE:
• Prices subject to change w/o notice
• Prices good for stock on hand
• Not responsible for typographic error

AUTOCAD AT SF STATE

The only AutoCAD Training Center™ in San Francisco

AUTOCAD TRAINING CENTER®

State-of-the-art CAD courses: MS DOS for CAD; Introduction and Intermediate AutoCAD; Customizing; 3D Features; AutoLISP I & II; Autodesk Animator; FMS/AC: CAD Facility Mapping; Mechanical Design & Drafting; CAD for Managers; ASG Architectural; SOFTDESK (DCA) CIVILSOFT.

Classes are:
• ongoing
• scheduled for days, evenings and weekends

Location:
SFSU Downtown Center
814 Mission Street
(between 4th & 5th)

New Course Framework

For more information call: SFSU Extended Education at: (415) 338-1205

$3 PER DISK — **HOT SOFTWARE** — $3 PER DISK

FREE 1100 + Disk Catalog on Disk! — **$1 Shipping Per 5 Disks + .07 Tax**

EGA103	Secret Agent Man-Apogee	E44	Super WP(4) Full word perfect clone!!
EGA102	Midnight Oil Solitaire-Tough	E1	PC Write Standard Level 2 (4 Disks)
EGA101	Empire-Modernized Risk Game	EGA91	Chinese Checkers-Great Graphic 1 to 6 players
B11	Hard Disk Menu v.3.07 - Best Menu System	WIN65	Winclick 3.0 & Winpost it 3.0
P47	New Printshop Fonts - 32 Fonts	GU7	GIFZJPG - 50% GIF Compression
WIN47	Icon Master 1.0	WIN52	GO - OCR - For Windows Supports Hand Scanners
ED36	Computer guide to Solar System	U76	PK-Lite 1.12 for DOS 5
GE4	Brothers Keeper 5.0 (3) Best Geneology	VP1	Scan 86B & Clean 86B - Virus Killer
GIF0A	VPIC 46, CShow 8.41 GIF Viewers	WIN41	Wincheck 3.0N
MU01	Lharc 2.13 - PKZIP 1.1 File Compression	VGA19	Dazzle 4.1 & Grafix VGA Demos
U75	Microsoft Diagnostics	WIN20	Screen Peace 1.2 - Super Screen Saver
GU12	Image Gallery-Photo album of GIFS	WIN49	Calendar Maker 3.0 - Super!!

GU1 Graphic workshop G.U. - converts between 15 file formats - menu drive

GENERIC COMPUTER SYSTEMS
22612 FOOTHILL BLVD., SUITE 200C, HAYWARD, CA 94541 (510) 581-1494
WALK-IN HOURS 10-7 MON-WED-THUR-FRI

BEST PRICES · HIGHEST QUALITY · GREAT SERVICE
NOW OPEN A NEW LOCATION IN EL CERRITO

Basic Systems Include:
- 486/386/286 Motherboard
- 486/386/286 CPU
- 1MB RAM
- 101 Keyboard
- 1.2MB or 1.44MB FDD
- Baby AT or Mini Tower Case w/PS
- 2 FDD & 2 HDD Contoller Card w/Cable

EISA Basic System

486-33 W/256K CACHE	$1199
486-33 W/128K CACHE	1184
486-33 W/64K CACHE	1169

ISA Basic System

486-50 W/256K CACHE	$976
486-50 W/128K CACHE	961
486-50 W/64K CACHE	946
486-33 W/256K CACHE	774
486-33 W/128K CACHE	759
486-33 W/64K CACHE	744
486-25 W/128K CACHE	709
486-33	698
486-25	648
486SX-20	499

ISA Basic System

386-40 W/64K CACHE	$429
386-33 W/64K CACHE	425
386-25	378
386SX-25 HALF	329
386SX-16 HALF	309
286-16 512K	262
286-12 512K	252

SPECIAL SYSTEM! 286-12
WITH:
- MGP
- I/O
- 40 MB HARD DISK
- 3.5" 1.44 MB FLOPPY DRIVE
- 9" MONITOR
- 1 MB RAM
- 101 KEYBOARD
- MB & CPU
- SLIM CASE

$450

1 YEAR WARRANTY PARTS & LABOR ON SYSTEMS

MOTHERBOARDS
EISA

486-33 w/256K	$594
486-33 w/128K	578
486-33 w/64K	561

ISA

486-50 w/256K	$189
486-50 w/128K	174
486-50 w/64K	159
486-33 w/256K	187
486-33 w/128K	172
486-33 w/64K	157
486-25 w/128K	170
486 & 386 SPECIAL BOARDS.	127
486-33	132
486SX-20	121
386-40 w/64K	135
386-33 w/64K	129
386-25 No Cache	92
386SX-25 w/CPU Half	139
386SX-16 Half	129
286-20	79
286-16	75
286-12	59
286-10	39

CASES

Baby AT Case w/200W PS	$55
Mini Tower Case w/200W PS	55
Big Tower Case w/230W PS	105
Mid Tower Case w/200W PS	85
Super Tower Case w/250W 2 Fans	169
Slim Case w/PS	89

VIDEO CARDS

MGP Card	$10
EGA Card	44
CGA CARD	28
VGA 800 x 600 256K	32
VGA 1024 x 768 256K	45
VGA 1024 x 768 512K	49
VGA 1024 x 768 1 MB	72
VGA Tseng Lab 1024x768 1 MB	99
ProDesigner IIsi	165

MONITORS

12" Mono	$71
14" Mono	95
640x400 VGA .51	199
Relisys RE 9513	280
Relisys RE 9514	289
Super VGA .28 1024x768	261
AAmazing 1024x768 .28	299
AAmazing Non Interlaced 1024x768	355
Sony 1304	555
Sony 1604 16" .25	969
Sony 1936 20" .30	2550
NEC 3FGX 15"	675
NEC 4DS 16" .28	999
NEC 5FG 17" .28	1520
NEC 5D 19"	2130
CTX Non-Interlace 14" .28	327
ADI Non-Interlace 14" .28	327
ViewSonic 5 Non 14"	495
ViewSonic 6 Non 14"	355
ViewSonic 7 17"	1195
ViewSonic 20"	1695

RAM

4 MB-60ns Simm	$145
4 MB-70 Simm	135
4 MB-80 Simm	125
1 MB-60	39
1 MB-70	36
1 MB-80	35
256K 80 Simm	10

CALL FOR CPU, MATH COPROCESSOR PRICE

FLOPPY & HARD DRIVES
***Floppy Drives**

Teac 2.88 MB FDD	$99
Teac 1.2 MB FDD	54
Teac 1.44 MB FDD	48

***MFM**

Seagate ST-225 20 MB	$172
Seagate ST-251-1 40 MB	221
Seagate ST-4097 80 MB	299

***IDE**

CONNER

20/40/80 MB	$85/185/275
100/120 MB	299/325
170/200 MB	429/575
QUANTUM 120 MB	326
MAXTOR	329

***SCSI**

ST-157N 40 MB	$238
ST-296N 80 MB	299
ST-1126N 110 MB	589
ST-120N 177 MB	599
ST-1400N 300 MB	1199
ST-1239N 211 MB	649
ST-4702N 613 MB	1489
ST-4766N 676 MB	1490
ST-41200N 1 GB	2099

MAXTOR

XT-41705 158 MB	$799
LAST213SY 213 MB	609
4380S 338 MB	1160
8380S 361 MB	1160
8702S 617 MB	1500
8760S 677 MB	1499
PO42S 1 GB	2199

CONTROLLER CARDS

MFM 2 FDD/2 HDD 1:1	$36
IDE 2 FDD/2 HDD 1:1	13
RLL 2 FDD/2 HDD 1:1	56
ESDI 2 FDD/2 HDD 1:1 64K	119
SCSI 2FDD/2HDD	129
SCSI DTC 3280A	121
SCSI DTC 3290E	679
SCSI UL24F	565
Adaptec AD1542B	289

MODEM CARDS

2400 Int/Ext Modem	$45/88
2400 MNP5 External	101
2400 Pocket Modem	83
9600 Fax/2400 Modem	69

KEYBOARD/MOUSE

101 Keyboard	$23
101 Click	28
Keytronic Keyboard	36
Track Ball 101 K	67
Logitech Mouseman	62

MISCELLANEOUS

AT I/O Card (2S/1P/1G)	$11
MS DOS 3.3	38
MS DOS 4.01	42
MS DOS 5.0	45
120 MB Colorado Tape Back-up	199
Tape	17
Tape Back-Up 120MB Controller Card AB10	69
250 MB Colorado Tape Back-Up	255
Tape	24
Tape Back-Up 250MB Controller Card FC10	99
Tape Back-Up 250MB Controller Card TC15	189
Sony 535 CD-ROM (600 MB)	379
NEC CD-ROM	Call
Diskette Box	7
Power Center	15

NETWARE
ETHERWARE LAN CARDS

NE 200 16 Bit	$95
NE 100 8 Bit	85

ARCNET LAN CARDS

160A 16 Bit	$69
160AB 16 Bit	72
120ST 8 Bit	49
120SBT 8 Bit	51

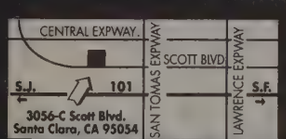
SCANNER

SCAN A 256C	$349
A4 Flatbed Scanner A4000C	1289
The A400Z B/W OCR Handy Scanner	129

DEALER INQUIRIES WELCOME

WENTEK Computer

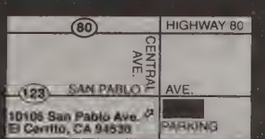
DEALER INQUIRIES WELCOME



(408) 727-4362
Fax: (408) 727-5528
3056-C Scott Blvd.
Santa Clara, CA 95054

MON-FRI: 8:30-6PM
SAT/SUN: 10-6PM

(510) 524-0312
Fax: (510) 524-1534
10106 San Pablo Ave.
El Cerrito, CA 94530



Prices subject to change w/o notice. Cash · Cashier's Check · Money Order. Personal Checks from Bay Area Only!

LOOK NO FURTHER...

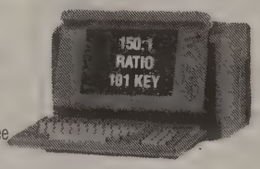
We Have Everything You're Looking For—Call And Be Amazed!

PORTABLE COMPUTER CENTER

WE ARE ABLE TO CUSTOM BUILD ANY DESKTOP CONFIGURATIONS INTO OUR PORTABLES TO SUIT YOUR NEED. PLEASE CALL FOR OPTIONS LIKE INTERNAL CD ROM, TAPE BACK-UP SYSTEM, 200 MB AND UP, IDE, ESDI OR SCSI HARD DISKS.

HI CONTRAST VGA PLASMA PORTABLE

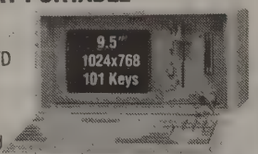
- 4 MB Memory
- 1.2 MB & 1.44 MB Floppy Disk
- 120 MB IDE H. Disk
- SVGA Card w/512K or 1 MB
- 2 Serial/Parallel Ports
- 200 Watt PS / 110/220 V
- Plasma Display On/Off Switch
- External (1024x768)
- 2 Full / 1 Half Length Slots Free



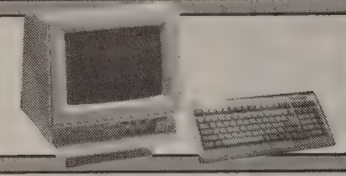
- **486DX-50 w/256K Cache** $3095
- **486DX-33 w/64K Cache** 2695
- **386DX-33 w/64K Cache** 2195
- **386DX-25/386SX-25** 2045/1945

SVGA/MONO CRT PORTABLE

- 4 MB Memory
- 120 MB IDE H. Disk
- 1.2 MB & 1.44 MB FD
- Serial/Parallel Port
- 3 Drive Bays
- Carrying Bag
- SVGA 1024x768 Card w/1 MB (256 Colors)



	COLOR SVGA	MONO
486-50 MHz 256K Cache	$3475	2895
486-33 MHz 64K	2975	2575
386-40 MHz 64K	2475	1695
386-33 MHz 64K	2455	1675
386-25 MHz	2375	1575
386SX-25	2275	1475



"HOT" NEW RELEASE!!

- Portable LAN Station/Stand Alone PC
- 386DX, 386SX, 286 CPU With 1 MB (up to 16 MB)
- Choose From 9" Color SVGA, Mono SVGA, Monochrome
- Built-in 1.44 MB Floppy Drive, External 1.2 MB or Tape Drive
- Please Call For Details

DESKTOP SYSTEM HOUSE

486-33 MHz w/64K CACHE $1875
- Basic System w/4 MB RAM
- 210 MB Hard Disk (15ms)
- SVGA Monitor w/1MB SVGA Card

386-33 w/64K CACHE $575
- Basic System Configuration
- 4 MB RAM

386DX-25 ..... $525
- Basic System Configuration
- 4 MB RAM

386SX-25 ..... $425
- Basic System Configuration
- 4 MB RAM

486-50 MHz
w/256K CACHE SYSTEM
CALL FOR BEST PRICE!

BASIC SYSTEMS INCLUDE:
- 1.2 MB or 1.44 MB Floppy Drive
- 1:1 2HD/2FD Controller
- Math Co-Processor Socket
- 2 Serial, 1 Parallel Ports
- Enhanced Case w/Power Supply
- Enhanced 101 Keyboard
- Clock/Calendar

Please Call For:
- ★Other Options
- ★Upgrade Or Repair Consulting
- ★Updated Prices

MONTHLY SPECIAL
- 386-40 MHz w/64K CACHE
- w/4 MB RAM, 210 MB (15ms)
- Hard Disk, Super VGA .28mm
- Monitor w/16 Bit 1 MB SVGA
- Card + Basic System

ONLY $1450

*With FREE 3 Button Fancy Mouse w/Pad And Hangar

BOARDS & ADD-ON CARDS

System Board (All Speeds)	CALL
SVGA w/1 MB 1280x1024	$175
I/O card for 386/286 2S/2P	35
Lancard Ethernet 16/8 Bit	140/120
Orchid ProDesigner IIS	179
SVGA Card w/512K 1024x768	55
SVGA Card w/1 MB 1024x768	79
SVGA ET 4000 w/1 MB	109
IDE Controller w/IO	25
ESDI Ultrastor 12F w/32K	155
SCSI Adaptec 1522 w/Kit	155

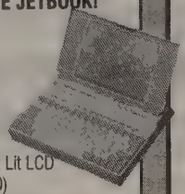
MONITORS

Super VGA (1024x768 .28mm)	$275
Super VGA (1024x768 .28mm) Non-Int	345
NEC 4 FG	775
NEC 3 FGX 15" Non-Interlace	629
Nanao 9070U 16"	889

NOTEBOOK

THE NEW 386SL-25 MHz EXTRA LONG BATTERY LIFE JETBOOK!

ONLY $1795



- VGA Super-Twist Back Lit LCD
- CCF Display (640x480)
- CRT & LCD Display Simultaneously
- 2 MB High RAM (Expandable to 8 MB)
- 60 MB Hard Disk (Conner)
- 1.44 MB Floppy Disk
- Auto-Switch AC to DC Adapter
- Battery Pack & Carrying Case
- Ports For External 1.2 Floppy Disk
- Overcharge Protection
  And Many Other Options
- Weight 6.5 Lbs.

DRIVES

250 MB/120 MB Tape Back-Up	$275/225
210 MB (15ms) IDE	549
125 MB (15ms) IDE	349
Teac 1.2/1.44 Dual Drive	164
1.2/1.44 Floppy Drive	57/55

Prices subject to change w/o notice

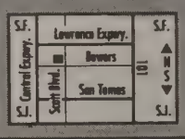
Dealer Pricing & Quantity Pricing Available

STORAGE SYSTEM ENGINEERING SERVICE

3350 Scott Blvd., Building 19, Suite 1902
(near Bowers Ave.)
Santa Clara, CA 95054

(408) 727-6040

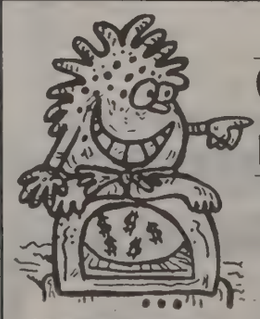
Your Source For Reliable Computers & Peripherals Since 1983



FAX: (408) 727-6042
Hours: 10am-6:30pm M-F
12noon-4:00pm Sat

MasterCard VISA

HAVE QUESTIONS...CALL THE TECHNICAL EXPERTS



TRY US...WE'RE DIFFERENT

Apple ZENITH IBM COMPAQ Macintosh
EPSON EVEREX TOSHIBA HEWLETT PACKARD AST RESEARCH INC.

SPECIAL PRICING AVAILABLE FOR RESELLERS

GIGABYTES

Quality Service and Upgrades
Specialists in Virus Detection & Removal • System Cleaning & Up Keep

• Registered trademarks are by the respective companies

TEL: (510) 790-0961 FAX: (510) 790-0915

Calendar Of Events continued

Conference. San Jose. NCNUA. Call: (408)279-4155.

June 9–16 Macromind Director Class. San Francisco. Center for Electronic Art. Call: (415)882-7063.

June 10–July 1 Claris CAD Class. San Francisco. Center for Electronic Art. Call: (415)882-7063.

June 11–12 PC Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

June 18 Accounting Systems Seminar: Tax And Managerial Reporting. Oakland. David Simon, CPA. Call: (510)893-5753.

June 18 Intro To Networks Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

June 18 NetWare Service And Support Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

June 19 Computer Mart. Cupertino. De Anza College Special Events. Call: (408)864-8350.

June 20 IBM PC Clone Troubleshooting And Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

June 20 Video Design Principles Class. San Francisco. Center for Electronic Art. Call: (415)882-7063.

June 22 Wireless LAN Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

June 22–July 17 Intro To Music Synthesis And Programming Using NeXT Workstations Class. Palo Alto. Stanford University Dept. of Music. Call: (415)723-4971.

June 25–26 Telecommunications Technologies For The Non-Engineering Professional Seminar. San Francisco. Data-Tech Institute. Call: (201)478-5400.

June 27 Advanced IBM PC Clone Troubleshooting And Repair Workshop. Oakland. Excel Micro Solutions. Call: (510)836-2040.

June 29 Intro To Data Communications Seminar. Oakland. Informational Data Network. Call: (510)465-9084.

June 30–July 21 Integrated Media Production I Class. San Francisco. Center for Electronic Art. Call: (415)882-7063. ■

Customer Satisfaction Is Our #1 Priority!

SYSPER

MULTIMEDIA SYSTEM

SYSPER 386-40 MPC

- 386-40 MHz
- 2 MB RAM
- 120 MB Hard Drive
- 1.2 MB or 1.44 MB Floppy Drive
- IDE Controller
- 2 Serial, 1 Parallel, 1 Game Port
- Pro Audio Spectrum Sound Board With Built-In SCSI Interface and Game Port
- Sony CD ROM Drive Bundled With CD Software, Compton's Encyclopedia, Jones in the Fast Lane and Windows 3.0 with Microsoft Multimedia Extension 1.0
- Non-Interlaced SVGA Monitor
- SVGA Card w/1MB
- 101 Keyboard
- Desktop Case w/Power Supply

$1945

MEDIA VISION

PC Multimedia PC

MULTIMEDIA UPGRADE KIT

Pro Audio Spectrum Multimedia Upgrade Kit Enhances Your Existing PC. Includes CD ROM, Sound Card Windows 3.0 Plus Multimedia Ext 1.0 And Software **$795**

CREATIVE LABS, INC. **$619**

MULTIMEDIA UPGRADE KIT

The All-In-One Multimedia Solution for the PC

SOUNDBLASTER Pro • CD-ROM Drive
MIDI Kit • Multimedia Software
Windows 3.0 With Multimedia Extension 1.0

CD ROM:

SONY	CALL
TOSHIBA	CALL

SOUND CARDS:

SOUND BLASTER	CALL
SOUND BLASTER PRO	CALL
SOUND COMMANDER	CALL
PRO AUDIO SPECTRUM	CALL
THUNDER BOARD	CALL

SYSPER 486

Sysper 486/33

With 120 MB Hard Disk
4 MB RAM and 64K CACHE

33 MHz $1235

Sysper 486/50

With 120 MB Hard Disk
4 MB RAM and 64K CACHE

50 MHz $1595

Sysper 486 Systems Include:
4 MB RAM, 1.2 MB or 1.44 MB Floppy, 120 MB Hard Disk, 101 Key MaxiSwitch Keyboard, 2FD/2HD IDE Controller, Medium Tower Case, 230 Watt Power Supply

SYSPER 486 EISA

HIGH PERFORMANCE FILE SERVERS & CAD SYSTEMS AVAILABLE WITH NAME BRAND MOTHERBOARDS FROM

•MICRONICS •ORCHID •AMI •MYLEX •PIONEER

CALL FOR CUSTOM CONFIGURATIONS

SYSPER 386

386 SUPER VGA SYSTEM

SPECIAL SUPER VGA SYSTEM

WITH 40 MB HARD DISK

386SX-16	$795
386SX-20	$815
386SX-25	$835
386-25	$885
386-33 w/64K CACHE	$945
386-40 w/64K CACHE	$965

INCLUDES:

- Choice of Desktop or Mini-Tower Case
- Choice of 1.2 or 1.44 MB Floppy Dr
- 40MB Hard Disk
- 200 Watt Power Supply
- One MEG Memory Standard
- Two Serial/One Parallel/One Game Ports
- 16-bit 1:1 Hard Disk/Floppy Controller
- 101 Enhanced Keyboard
- SVGA Monitor
- SVGA Card w/512K

NAME BRAND SYSTEMS:

AST COMPUTERS · SAMSUNG · ALR · Acer · EVEREX · Panasonic

Lowest Prices on all Products Guaranteed!

PRINTERS:

WE CARRY MOST MAJOR BRANDS OF LASER AND DOT MATRIX PRINTERS

MONITORS:

9" MONO	CALL
9" MONO VGA	CALL
10" SVGA COLOR	CALL
14" SAMSUNG SVGA .28 DOT	295
14" SAMSUNG SVGA .39 DOT	255
14" SVGA .28 DOT	265
14" SVGA .39 DOT	235
14" VIEWSONIC 4E	310
14" VIEWSONIC 5E NON-INT	425
14" VIEWSONIC 6 NON-INT	355
14" SEIKO 1450 NON-INT	555
14" SONY 1304 NON-INT	560
14" TAXAN 1024X768 .28 DOT NI	445
14" OPTIQUEST	CALL
14" SVGA LOW RADIATION	CALL
15" OPTIQUEST	CALL
15" SAMSUNG	525
16" NANAO 9070U	895
16" NANAO 9080I	1045
16" MITSUBISHI	995
17" TAXAN FLAT1024X768 .31 DOT	945
17" SAMSUNG 1024X768 .31 DOT	865
17" IDEK 5117	965
17" IDEK 5217	995
17" IDEK 5317	CALL
20" VIEWSONIC 8	1695
20" MITSUBISHI HC1325LATK	1775
20" SEIKO 2050 & ORCHID PROII CARD W/512K	1825
20" SAMSUNG CC 9511 1250X1024 .31	CALL
20" NANAO	CALL
21" NANAO	CALL
21" IDEK	CALL

VIDEO CARDS:

DIAMOND SPEEDSTAR PLUS W/1 MB	$155
DIAMOND SPEEDSTAR PLUS HICOLOR W/1 MB	175
DIAMOND STEALTH 1 MB VRAM HICOLOR 1280X1024	275
HERCULES GRAPHIC STATION 1MB/3MB	545/795
VIDEO 7 1024i w/512K	165
VIDEO 7 VRAM II 1MB	355
ATI WONDER XL W/MOUSE 1MB HICOLOR	225
ATI GRAPHICS VANTAGE PLUS 1MB	345
ATI GRAPHICS ULTRA PLUS VRAM 1MB	575
STB POWERGRAPH W/1MB HICOLOR	175
STB WIND/X	275
ORCHID PRO II HICOLOR	CALL
ORCHID FAHRENHEIT	CALL

MODEMS:

2400 BAUD MODEM	$50
9600/2400 FAX MODEM	95
EVEREX 2400	CALL
EVEREX 2400 MNP5	CALL
US ROBOTICS	CALL

TAPE BACK-UP:

COLORADO DJ10	$235
COLORADO DJ20	285
IRWIN	CALL
ARCHIVE	CALL
MAYNARD	CALL

DIGITIZERS:

SUMMASKETCH II 12X12 4/16 BUTTON	$335
CALCOMP 12X12 4/16 BUTTON	310
KURTA IS/ONE 12X12 4/16 BUTTON	325

CALL FOR OTHER MODELS

CONTROLLERS:

ADAPTEC
ALWAYS
DPT
FUTURE DOMAIN
ULTRASTOR
WESTERN DIGITAL

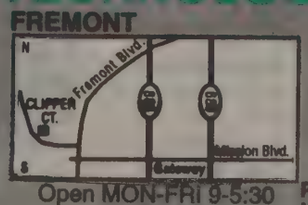
HARD DRIVES:

40MB TO 1.2 MB
QUANTUM
MAXTOR
SEAGATE
CONNER
FUJITSU
WESTERN DIGITAL
MICROPOLIS

SYSPER TECHNOLOGIES, INC.

SYSPER

FREMONT



4031 Clipper Court
Fremont, Ca 94538
Fax: (510) 651-9699

Open MON-FRI 9-5:30
SAT 10-3

Prices Subject To Change w/o Notice, Not Responsible for typographic errors.

TEL: (510) 651-8002

TOLL FREE OUTSIDE CALIFORNIA (800) 441-5484

BUSINESS LEASING & FINANCING AVAILABLE...CALL FOR DETAILS

CORPORATE, SCHOOLS & GOV'T P.O'S WELCOME
DEALER INQUIRIES WANTED

Computer Solutions to Business Problems
OFFICE AUTOMATION

Revolutionary Product Assistant Request System™

We have developed the most sophisticated document processing system to aid in your convenience on receiving information on the various products and services we offer.

If you need specification on any products or services we offer simply dial our **Product Assistant Request System™** at **510-888-1100** and the 3 digit extension listed next to the product or service, and we will send the specification back to you via fax machine. This enables you to gather information and make decisions quickly, usually under 1 minute.

Computer solutions to business problems

The Product Assistant Request System™

Deliver your product information using fax technology!

Our system can be tailor made to fit your customers and business needs.

- Be there first for your customers - Make all your product information available for any prospect or customer 24 hours a day.
- Instant fulfillment - For the customer wanting information, while improving your sales ratios!
- Distribute information

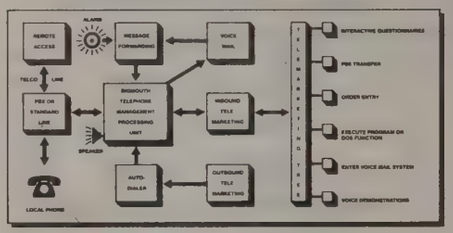
Call for complete details on how we can automate your business with **Product Assistant Request System™**

#601

VOICE MAIL

- Did the receptionist get your message wrong?
- Are you tired of playing phone tag?
- Do you need a 24 hour receptionist?
- Are your employees wasting precious time?
- Are you aware that 7 out of 10 inquiries are misdirected?

If you are tired of experiencing some of the above problems, then it is time to call us. We can consult with you on the most cost effective voice mail solution.



Voice Mail Features

- Call Processing
- Outbound Telemarketing
- Phonebook-Database
- Auto-Dialing
- Call Logging
- Timed Messages
- Alarm Notification

#701

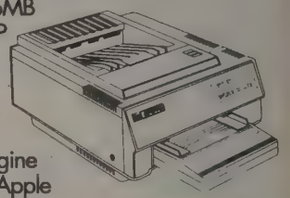
PC MAGAZINE EDITOR'S CHOICE

QMS™

As a QMS Diamond Dealer we can offer you a large selection of top quality printers, great service, with great pricing.

QMS-815

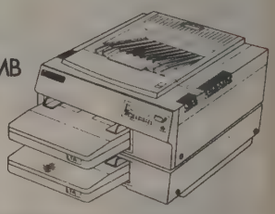
- 20MHz 68020
- 2MB installed expandable to 6MB
- HP LaserJet & HP GL Emulations
- 45 Adobe® PostScript® Fonts
- High quality CANON SX Engine
- Serial/Parallel/Apple interface



#501 **$CALL**

QMS-825

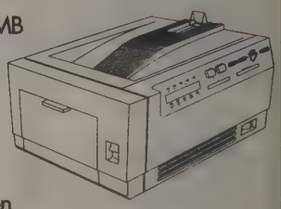
- 20MHz 68020
- 2MB installed expandable to 6MB
- HP LaserJet & HP GL Emulations
- 35 Adobe® PostScript® Fonts
- High quality CANON TX Engine
- Serial/Parallel/Apple interface



#502 **$GREAT VALUE**

QMS-410

- 17MHz 68020
- 2MB installed expandable to 6MB
- HP LaserJet & HP GL Emulations
- 45 Adobe® PostScript® Fonts w/Adobe's ATM
- Automatic Mode Switching between Mac and PC's
- Serial/Parallel/Apple interface



#503 **$CALL**

PARS
INTERNATIONAL COMPUTER

22441 Foothill Blvd.
Hayward, CA 94541
510-733-0103
FAX 510-733-0206

100 Homeland Ct. Suite #400
San Jose, CA 95112
408-441-6990
OPEN: MON-SAT

FAN CARD

Now run everything cooler than ever!

Used in Desert Storm

BATTLE TESTED

Computers today run hotter than ever, your regular installed fan may not be enough. This new product is designed to relieve heat buildup inside the case and extend the life of your computer. Heat is the enemy of all computers, causing chip failure, component deterioration and system crashes. FanCard circulates fresh air directly on boards and components generating the most heat. FanCard fits in any 8, 16 or 32 bit Bus and requires no additional power supply. FanCard-I has a single fan; FanCard-II has two fans for optimum cooling power. **#555** CALL FOR DETAILS

NOW OPEN IN SAN JOSE
WE'VE GOT IT ALL, PLUS SUN!
LIFETIME LABOR WARRANTY ON ALL SYSTEMS

"The Best Dealers In The World"
–John Heilborn
Int. Syndicated Computer Writer

Pars Commitment to Your Satisfaction

1. Money back guarantee for any software compatibility
2. Lifetime labor and technical support warranty
3. Same day turnaround on service and upgrades
4. Join our long list of satisfied customers

486-50 MHz w/256K Cache

200 MB Hard Drive
14" Super VGA Color Monitor
- 4 MB RAM
- Full Tower Case
- 1.2 or 1.44 MB Floppy Drive
- FD/HD Controller
- Key Office Master Software Included
- Audio Card

#203 **EISA Available** $CALL

SUN™ WORKSTATIONS AND COMPATIBLES

25 to 40 MHz Available
Call for Custom Configuration

X-Terminal Workstations #301 $999

X-Terminal Software for your PC #302 $399

Quantity Discounts Available

SUN is a registered trademark of Sun MicroSystems

286-16 MHz

40 MB Hard Drive
14" VGA Color Monitor
- 1 MB RAM
- Turbo Case
- 200 Watt Power Supply
- 1.2 or 1.44 MB Floppy Drive
- FD/HD Controller
- Key Office Master Software Included
- DOS 3.3 Included

#200 $699

486-33 MHz w/256K Cache

120 MB Hard Drive
14" Super VGA Color Monitor
- 4 MB RAM
- Full Tower Case
- 1.2 or 1.44 MB Floppy Drive
- FD/HD Controller
- Key Office Master Software Included

#204 **EISA Available** $CALL

HandHeld Portable Hard Drive

Increase your Hard Drive storage by connecting this handy drive to the parallel port in either your laptop or desktop system. Does not require an expansion slot. Great for the person on the go, and your backup requirements.

20MB VERSION #420 $299

CALL FOR 40, 80 and higher MB Version.

386SX-16 MHz

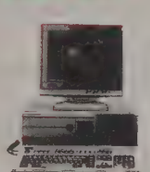
40 MB Hard Drive
14" VGA Color Monitor
- 1 MB RAM
- Turbo Case
- 200 Watt Power Supply
- 1.2 or 1.44 MB Floppy Drive
- FD/HD Controller
- Key Office Master Software Included
- DOS 3.3 Included

#201 $899

386-33/40 MHz w/64K Cache

40 MB Hard Drive

SPECIAL THIS MONTH



- 1 MB RAM
- Turbo Case
- 200 Watt Power Supply
- 1.2 or 1.44 MB Floppy Drive
- FD/HD Controller
- Key Office Master Software Included

#205 $989/999

HP DeskJet 500 C

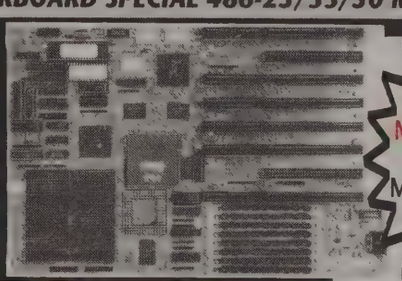
#510 $CALL

KODAK Portable Printer

#520 $249

486-25/33/50 MOTHERBOARD SPECIAL 486-25/33/50 MOTHERBOARD SPECIAL 486-25/33/50 MOTHERBOARD SPECIAL

486 UPGRADE SPECIAL WE CAN UPGRADE YOUR PRESENT SYSTEM TO A 486-CALL NOW!
Dealer Inquiries Welcome



We Also Carry MICRONICS MYLEX Motherboards & Systems CALL

Optimum Performance #250

- Intel 80486-25/33 CPU
- 64/128 KB Secondary Cache/2-way set-associative
- Highly integrated chipset adds reliability and shows design strengths
- Expandable to 32 MB on board
- Fast page mode, 2-way interleaving DRAM Controller
- System and Video BIOS shadowing
- Baby AT form factor, 6 layer board

Looking for Hard Drive and Memory Upgrades CALL US!

PARS
INTERNATIONAL COMPUTER

22441 Foothill Blvd.
Hayward, CA 94541
510-733-0103
FAX 510-733-0206

100 Homeland Ct. Suite #400
San Jose, CA 95112
408-441-6990
OPEN: MON-SAT

HARD DRIVE SPECIALS

40 MB WESTERN DIGITAL #401	$265
80 MB MAXTOR #402	325
120 MB CONNER #403	415
200 MB MAXTOR #404	675

CALL FOR:
80 MB, 100 MB, 200 MB,
380 MB MFM, ESDI OR SCSI DRIVE

TAPE BACKUPS

40 MB #410	$265
120 MB Int #412	339

LIFETIME LABOR & 1 YEAR PARTS WARRANTY ON ALL SYSTEMS
DEALER INQUIRIES WELCOME
Not responsible for typographical errors.
Prices subject to change without notice.

THIS MONTH'S SPECIAL

CITIZEN GSX130 #531	$279
CITIZEN 200 GX #532	169
MOUSE w/WINDOWS #561	89
FRECOM FAX/MODEM 9600/2400 #570	CALL
CD ROM 550 MB #580	449
Norton Anti-Virus #562	95
Word Perfect for Windows 5.1 #563	269

We now carry HP, IBM, Compaq, & AST

VISA MasterCard

Please mention this Ad for these prices.

USER GROUP NETWORK

BULLETIN BOARDS

BBS reviews by Kathleen Creighton

209

BerthaBoard. (209)823-9858. 1200–14,400 V.32. 3 lines, 3 gigs, 50,000 files, lrg. msg. base. [Exp. #94.]

408

A32 Macintosh User Group BBS. (408)263-0299. 24 hrs., 2400. Second sight, members only. Voice: (408)263-0398. [Exp. #94.]

Alive With Color BBS. (408)982-9345. IBM, games, education, GIFs. Free. [Exp. #95.]

Amiga (The Dungeon) BBS. (408)384-6370. 24 hrs., 1200/2400. Games, files, info on Amiga viruses, some IBM files. Sysop: Garnett Sanders. [Exp. #94.]

The Beggar's Tomb. (408)395-1425. GIFs, stories, and animation for all adult orientations. Sysop: The Grim Reaper. [Exp. #95.]

BrainDead BBS. (408)973-0454. 8-N-1, 1200/2400/9600. Adults only, thousands of files, validation required. No fees. Sysop: Lumpy. [Exp. #96.]

Burn This Flag. (408)363-9766. Topics from Abortion to Zionism. NIRVANAnet. [Exp. #95.]

Cruz'in BBS. (408)464-8924. 300/1200. Commodore 64/128. Online games, file transfers, message base, and user group. Sysop: Michael Baldwin. [Exp. #94.]

Cruzio. (408)423-9995. 8-N-1, 1200/2400/9600/19,200. Santa Cruz, email, USENET newsgroups, calendar, agency & gov't directory listings. Sysop: Chris Neklason & Peggy Dolgenos. [Exp. #95.]

The Cypress Express BBS. (408)423-3812. 8-N-1, 1200/2400. Various message areas and assorted topics of interest for everyone. FidoNet 1:143/512. CoSysops: Jen Campbell and Lincoln Quale. [Exp. #94.]

The Dark Side. (408)245-SPAM. 24 hrs. Free access to Usenet and UUCP mail. Since 1985. Internet: darkside.com. [Exp. #94.]

DC-To-Light. (408)262-5150. 8-N-1, 24 hrs., 300/1200/2400/9600. MS-DOS, CAD, UNIX, WIN, LAN & HAM: Conferences and email. Sysop: Fred Townsend. [Exp. #94.]

Ed's Chess Board. (408)287-4004. Chess games, open to all. USCF ratings, clubs, tourneys, library. Donations only with a complimentary gift for donations of $15 or more. [Exp. #94.]

The Electric Pages. (408)253-4280. 300/1200/2400. Commerical and private advertising. Select by category or key words. Online ordering. Voice: (408)253-1709. Sysop: Communications, Inc. [Exp. #96.]

Fantasy Network South. (408)985-1529, 734-9448. Online, multiuser, interactive D&D style, fantasy adventure game. [Exp. #95.]

Fun Seekers. (408)379-0958 (300–2400), (408)379-9680 (300–19,200). 8-N-1. IBM/Apple utils, games, adult, bus. ed., fitness, and more. Designed for the whole family. [Exp. #96.]

Garlique Graphics, World Famous Images. (408)847-0665. 24 hrs., 2400/9600. When only the best will do. VISA/AMEX/Mastercard req. for downloads. [Exp. #95.]

HAM BBS. (408)267-6396. 300/1200/2400. Ham radio, scanner, SWL. TechNet, RIMW, RFNet. No fee. Sysop: Travis Wise [Exp. #95.]

The Haunted Castle BBS. (408)226-1052. 9600. Games, GIFs, utils. [Exp. #96.]

Hot City NetWorking. (408)848-6681 (2400); 848-8313 (9600). Amiga, IBM, Mac, etc., 2.2GB, six lines chat, UUCP, Fido, online games. [Exp. #95.]

Iced BBS. (408)980-0831. 8-N-1, 300/1200/2400. EE, Fractals, Alife, Cellular Automata, AI, IC Editor Support, TechNet, and "Bob." Sysop: Phillip M. Mol. [Exp. #95.]

Inferno (South Bay) BBS. (408)749-1693. 24 hrs., 300/1200/2400/9600. Using Galacticomm Major for twenty-five lines, teleconferencing, email, SIGs, multiuser games, most computer types. Sysop: Jerry Christensen. [Exp. #95.]

Infoserve Connections. (408)243-2102. 8-N-1, 24 hrs., 2400. UUCP/Usenet/email for DOS, Mac, and 386/UNIX. Sysop: B. Oesterreich. [Exp. #94.]

Laser Light BBS. (408)496-0771. 24 hrs., 2400. MS-DOS, online games, sound, misc. No ratio. Free. Sysop: Robert Mueller. [Exp. #95.]

Liberty Bell BBS. (408)243-1933. 8-N-1, 24 hrs., 300/1200/2400. A discussion BBS on the libertarian philosophy. First-time callers have full access to message areas. Internet access for email. Sysop: Mark Hinkle. [Exp. #96.]

Lynn-Western Newswires. (408)778-5994 & 778-9656. 8-N-1, 24 hrs., 1200/2400. FidoNet 1:143/304. Professional information on technology, management, and worldwide investment news. Stock Market data online. [Exp. #95.]

Magic Kingdom. (408)245-3961, 253-2426. 2400. Teleconference, files, email, multiplayer games, and more! sixteen lines. [Exp. #95.]

Moonlit Knight. (408)244-3459. 300–14,400. New user help, music, games, & fun. TechNet HUB, free! Sysop: Allen Woolley. [Exp. #95.]

Moose Is Loose BBS. (408)773-9573. 1200/2400/9600. The best message base under Sunnyvale's fruit can. SASE req. required for file access. Sysop: John Giever. [Exp. #95.]

Mountain Retreat. (408)335-4595. 1200–14,400. 660MB, FidoNet member, specialty Turbo Pascal. Sysop: John Jamieson. [Exp. #94.]

The Nebula. (408)738-4679. 1200/2400. Play and beta test online wargames! Discussion forums. Free. Sysop: Rick Novy. [Exp. #95.]

NightLog BBS. (408)655-1096, 655-8294. 24 hrs., 300–14,400. Files, adult, eight lines, 3GB. Sysop: Karl Van Lear. [Exp. #96.]

Online Consultant. (408)223-9886. 8-N-1, 1200/2400. PC help for individuals and small business. [Exp. #96.]

The PIT BBS. (408)460-8064. Stimulating forum discussions, singles mate matcher, ads, forums. Focus: Daily stress relief and fun. Sysop: Steve Hansen. [Exp. #96.]

Continued

Windows Online IDS

Get the Windows utilities you need today by modem! We have over 9,500 public domain Windows and DOS programs.

- 10 Phone lines. No busy signals.
- Hot tips and reviews
- Over 35 hot new files every day!
- USR DS & CompuCom modems
- Visa & MC accepted for memberships

CALL TODAY FOR YOUR FREE PREVIEW!
(510) 736-8343 Modem
See our ad in the classified section.

Pacific Vision BBS
Rent and operate a Bulletin Board for $30 a Month
(415) 324-3780
8/N/1 300-2400 Baud

INFOSERV CONNECTIONS
Affordable USENET/INTERNET service for small systems.
Modem number:
(408) 243-2102/04 8N1
24hrs. • VISA/Mastercard

Amateur Action BBS
100% Amateur Adult GIF Files.
New Member Bonus!!
Receive a **FREE** Amateur Video!!
VISA MasterCard
(408) 263-3393
8 Lines
US Robotics Dual Standard Modem
1200/2400/9600 V.32/14400 HST

Religion Online

There aren't very many subjects more emotionally charged than religion, which makes it a natural for the BBS arena. Should you decide to ignore the parental admonition to not discuss religion in polite company, there are a few Bay Area BBSes dedicated to discussions of a religious and/or spiritual nature.

A caveat about contacting religious boards—these BBSes carry echo areas from around the country, around the world, or both, and beliefs of all participants are strongly held. Strong beliefs can lead to heated discussion and sometimes offensive positions.

Senses of humor and detachment can both help. One Bay Area BBS, **Temple of the Screaming Electron** (510/935-5845, 2400 baud 8N1), has a message area called "My God Can Beat Up Your God."

Catholic Information Network

Catholic Information Network (CIN) was founded in 1987 in San Francisco, although the founders and the main node are now in San Diego. CIN, which does not represent any official position of the Roman Catholic Church and is not operated by it, exercises tight control over which BBSes can be "authorized" nodes, although it does allow other GT Power BBSes to carry selected message areas. With four authorized nodes in the Bay Area and another six authorized nodes around the country, CIN hosts an active but relatively small group.

Message areas include a main area, prayer, ecumen, "Ask Father" (where questions are answered anonymously by a Catholic priest), Bible (restricted to discussion of the Catholic version thereof), and ethics. There is also a message area for homeschoolers.

Each Bay Area node of CIN has its own identity as a BBS. **Western Dominican BBS** in Berkeley (510/528-3928, 2400 baud 8N1, Vincent Benoit, O.P., sysop) has a local message area for the "Dominican Family" and carries a fair number of Catholic Church documents and articles for downloading, including a large vocations section. **The San Francisco Node** (415/239-7925, 2400 baud 8N1, Hugh O'Regan, sysop) is known on the network as "The Progressive Node of CIN," and O'Regan's caveat at login specifically disallows "rude or abusive behavior directed at any group." **The Angelus**, in Los Altos (415/967-3420, Maryanne Lawless, sysop), opens with that prayer and has a selection of articles for download. **Kolbe Academy** in Napa (707/255-1581, 1200 baud 8N1, Francis Crotty, sysop) is a small private Catholic school for students from grade 1–12, offering BBS assistance to homeschoolers.

Keshernet

This fairly new network ("Kesher" means "connect") lives on **EPstar BBS** in Fairfax (415/454-8206, 2400 baud 8N1). Al Kaplan is the sysop and cofounder of Keshernet. This BBS provides fifteen Keshernet message areas, ranging from serious discussion of items of Jewish faith, such as Torah, to the practical, such as Hebrew, to an echo dedicated to "schmooze." Additional FidoNet echos, such as Judaica,

Continued

BEST PRICE! BEST QUALITY! (408)945-1411

CALL FOR UPDATED PRICES

LAITRON COMPUTER MONTHLY SPECIALS

SYSTEM	M/B + CPU	BASIC SYSTEM	BASIC + 40 MB HDD + 12"MONO	BASIC + 40 MB HDD + VGA	BASIC + 40 MB HDD + SVGA	BASIC + 80 MB HDD + SVGA	BASIC + 120 MB HD + SVGA	BASIC + 200 MB HD + SVGA
486-50 EISA	$1417	$1587	$1857	$1997	$2047	$2137	$2197	$2447
486-33 EISA	$1017	$1187	$1457	$1597	$1647	$1737	$1797	$1987
486-50/64K	$827	$997	$1267	$1407	$1457	$1547	$1607	$1857
486-33/64K	$547	$707	$987	$1137	$1157	$1147	$1307	$1507
486-25/128K	$447	$617	$887	$1027	$1077	$1167	$1227	$1377
486SX-20	$337	$507	$777	$917	$967	$1057	$1117	$1367
386-40/64K	$267	$437	$707	$847	$897	$987	$1047	$1197
386-33/64K	$257	$427	$697	$837	$887	$977	$1037	$1187
386-25	$197	$367	$637	$777	$827	$917	$977	$1177
386SX-25	$147	$317	$587	$727	$777	$867	$927	$1127
386SX-16	$124	$294	$564	$704	$754	$844	$904	$1104
286-12	$57	$227	$497	$637	$687	$777	$837	$1087

BASIC SYSTEMS INCLUDE: Motherboard, CPU, 1 MB RAM (512 KB for 286 systems), 1:1 2 HD/2 FD controller, 1.2 MB or 1.44 MB floppy drive, internal clock/calender, math co-processor socket, case, power supply, & 101-key keyboard

HARD AND FLOPPY DRIVES

40 MB/28 ms IDE	$179
85 MB/18 ms IDE	$278
100 MB/18 ms IDE	$295
120 MB/16 ms IDE	$329
130 MB/15 ms IDE	$339
200 MB/16 ms IDE	$587
240 MB/15 ms IDE	$610
200 MB/16 ms SCSI	$597
340 MB/15 ms IDE/SCSI	$947
676 MB/16 ms SCSI/ESDI	$1297
TEAC 1.2 MB floppy	$58
TEAC 1.44 MB floppy with mounting kit	$55

CONTROLLER CARDS

IDE 2FD/2HD	$13
IDE 4FD/2HD	$34
IDE 2FD/2HD/2S/1P/1G	$24
MFM 2FD/2HD	$40
ADAPTEC 1542B Kit	$270
BUSTEK SCSI EISA	$397
ULTRASTOR 12C with 1 MB	$397
ULTRASTOR 24F/24C EISA SCSI	$487/$687
ULTRASTOR 22F/22C EISA ESDI	$487/$687

MONITORS

VIEWSONIC 4	$314
VIEWSONIC 5	$525
VIEWSONIC 6	$367
VIEWSONIC 7	$1097
VIEWSONIC 8	$1600
NANAO 9070U (16", .28dp)	$863
NANAO 9080I (16", .28dp)	$995
NANAO F550I	$1070
NEC 3FGX (15", .28dp)	$660
NEC 3FG	$760
SONY CPD1304 (14", .25dp)	$542
SONY CPD1604 (17", .25dp)	$993
MAG 15H (15", .28dp)	$617
OEM 12" Monochrome	$73
OEM 14" Monochrome	$92
OEM 14" Monochrome VGA	$115
OEM 14" VGA (.51dp)	$194
OEM 14" SVGA (.39dp)	$229
OEM 14" SVGA (.28dp)	$269

VIDEO CARDS

ORCHID IIS/FAHRENHEIT 1280 w/1 MB	$237
ORCHID IIS with high color	$163
ORCHID IIS with 1 MB	$148
DIAMOND SPEEDSTAR+ with 1 MB	$141
DIAMOND SPEEDSTAR w/high color	$162
TRIDENT with 1 MB	$73
TRIDENT with 512 K	$48
OAK with 256 K	$35
MGP	$11

MATH CO-PROCESSORS

WEITEK 4167-33	$595
WEITEK 4167-25	$575
INTEL 80387DX-33/25	$197/$183
INTEL 80387SX-20/16	$147/$137
CYRIX 387DX-40/33/25	$197/$183/$169
CYRIX 387SX-25/20/16	$138/$128/$118
IIT 387DX-40/33/25	$185/$163/$155
IIT 387SX-25/20/16	$128/$119/$110

COMPULAN NETWORK PRODUCT

(2-YEAR WARRANTY FOR MOST ITEMS)

12 PORT CONCENTRATOR	$525
8 PORT CONCENTRATOR	$379
16-BIT DUAL-PORT SHARED MEMORY	$149
32-BIT EISA BUS ETHERNET	$279
16-BIT NE2000 COAXIAL ETHERNET	$103
16-BIT 10 BASE-T ETHERNET	$113
ARCNET 4-IN-1 PARALLEL PORT POCKET ADAPTER	$137
ETHERNET 10 BASE-T POCKET ADAPTER	$195
THIN ETHERNET BNC POCKET ADAPTER	$195

PRINTERS

PANASONIC KX-P1180	$159
PANASONIC KX-P1123	$203
PANASONIC KX-P1124i	$293
PANASONIC KX-P1624	$368
EPSON LQ510	$235
EPSON LQ570	$255
PRINTER CABLE	$5

MISCELLANEOUS

AT I/O 2S/1P/1G	$12
PRINTER CARD	$12
MS-WINDOWS 3.0 + MOUSE (400dpi)	$63
2400 INTERNAL MODEM	$39
9600/2400 INTERNAL FAX/MODE	$72
9600 INTERNAL MODEM	$283
OEM 3-BUTTON MOUSE	$14
LOGITECH MOUSEMAN (SERIAL)	$63
LOGITECH MOUSEMAN (BUS)	$69
LOGITECH SERIAL MOUSE	$35
COLORADO DJ-10 TAPE DRIVE	$205
COLORADO DJ-20 TAPE DRIVE	$249

KEYBOARDS

MAXISWITCH 101-KEY KEYBOARD	$34
KEYTRONIC 101-KEY KEYBOARD	$39
LITE-ON 101-KEY KEYBOARD	$24
CHICONY 101-KEY KEYBOARD	$26
NORTHGATE OMNIKEY 102/ULTRA	$83/$113

MEMORY CHIPS

1 MB x 9 SIMM 80 ns	$34
1 MB x 9 SIMM 70 ns	$35
1 MB x 9 SIMM 60 ns	$37
4 MB x 9 SIMM 80 ns	$135
4 MB x 9 SIMM 70 ns	$140
4 MB x 9 SIMM 60 ns	$145

CASE AND POWER SUPPLIES

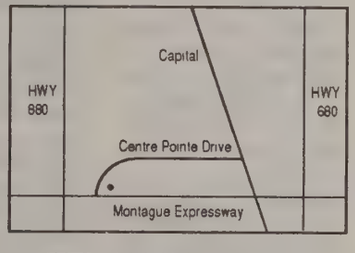
DESKTOP AT CASE w/200W PS	$59
MINI TOWER CASE w/200W PS	$77
MEDIUM TOWER CASE w/200W PS	$94
FULL-SIZE TOWER CASE w/230W PS	$117
250W UL LISTED POWER SUPPLY	$69
300W UL LISTED POWER SUPPLY	$79

SOFTWARE

MICROSOFT WINDOWS 3.0	$45
MICROSOFT DOS 5.0	$45
MICROSOFT WORD FOR WINDOWS 2.0	$317
BITFAX FOR WINDOWS 3.0	$50

LAITRON COMPUTER

HOURS:
9:00 AM to 7:00 PM PST Mon-Fri
10:00 AM to 5:00 PM PST Sat & Son



TEL:(408)945-1411
FAX:(408)945-1075
1646 CENTRE POINTE DRIVE
MILPITAS, CALIFORNIA 95035

***3 DAY MONEY BACK GUARANTEE**
*ONE YEAR PARTS AND TWO YEAR LABOR WARRANTY
*PRICE AND AVAILABILITY SUBJECT TO CHANGE WITHOUT NOTICE
*SHIPPING, INSURANCE, AND COD CHARGES ARE EXTRA AND ARE NOT REFUNDABLE
*PRICES REFLECT CASH DISCOUNTS
*VISA AND MASTERCARD ARE ACCEPTED
*NEXT DAY DELIVERY SERVICE AVAILABLE
*ALL RETURN ITEMS MUST HAVE PRIOR AUTHORIZATION FROM OUR SERVICE DEPT
*ALL RETURNS MUST BE IN ORIGINAL PACKAGING COMPLETE WITH MANUALS
*NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS ON THIS AD

Ring Of Fire BBS. (408)739-8753 (2400bps), 739-8371 (9600bps). BBS for United Sysop's Association and Silicon Valley Novell Users Group. Since 1983. Sysop: Bill Strouse. [Exp. #95.]

The Rising Storm. (408)739-8693. 8-N-1, 9600. Emergency prep., firearms, current events, earthquake maps. Sysop: Kirk DeHaan. [Exp. #94.]

Second Source Parts, Inc. (408)248-3870. 8-N-1, 24 hrs., 300/1200/2400. Medical equipment, new & used parts, consumables, info & more. [Exp. #95.]

ShrinkTank BBS. (408)257-8131. 8-N-1, 300/1200/2400 & 9600 for SuperModem users. Mental Health, psychology, Men's Issues, Metrolink conferences. All users welcome! Sysop: Rob Bischoff, Ph.D. [Exp. #95.]

The Silicon Matchmaker. (408)492-9700. 24 hrs., 300/1200/2400. Electronic PenPal Network, 16 lines. [Exp. #94.]

Spectrox Systems. (408)252-1005. 1200/2400. From Cupertino, tons of programs for MS-DOS, Windows, Mac, and UNIX. Free Usenet and UUCP mail access. Usenet Newsgroup. Sysop: Aaron Anderer. [Exp. #95.]

The Spider's Den BBS. (408)266-9835. Windows files, doors, adult files, and GIFs, 225MB. [Exp. #95.]

Starnet Connections. (408)949-3133. 8-N-1, 24 hrs., 300/1200/2400/9600. Los Altos. Email, UseNet, UNIX, and more. Sysop: Richard Mahn. [Exp. #94.]

SUBBS. (408)765-1695. 300–9600 V.32. Free, public, upload, download, Intel sponsored. Sysop: Mark Elston. [Exp. #94.]

Sure 28 Famous. (408)866-2659. 24 hrs., 300/1200/2400. VirtualNet, 100+ topics, doors, files. Sysop: Guy W. Tessum. [Exp. #94.]

SVCS BBS. (408)956-1204. 8-N-1, 24 hrs., 300/1200/2400/9600. Features MS-DOS, CAD, UNIX, GIF, WIN, LAN, & HAM. SIG conferences and email. Sysop: Fred Townsend. [Exp. #94.]

T24-Hours-A-Day BBS. (408)448-1126. 24 hrs., 300/1200/2400. Theme: 12 Step Programs. Sysop: Mike R. [Exp. #94.]

Texas Instruments PCs. (408)296-2503. 24 hrs., 2400. Message base, user group info & software for TIPC. Sysop: Mark Cantrell. [Exp. #95.]

The Tower Of Pegasus. (408)761-0992. 8-N-1, 300–38,400. 40,000 files, PC-SIG, adult, five lines, plus 800. Variable fee. Voice: (408)722-8175. Sysop: Marc Jacobs. [Exp. #96.]

Trashbin BBS. (408)732-8558. 8-N-1, 1200/2400. Adults only, thousands of files, validation required, subscriptions available. Sysop: Trashman. [Exp. #96.]

The Village. (408)229-0706. 300/1200/2400/9600/14,400, USR-HST V.42bis, Online games, 400MB. Full access with first call. Sysop: Michael Wilson. [Exp. #96.]

The Warrior Realm BBS. (408)287-3945, 287-0835. 8-N-1, 24 hrs., 300/1200/2400. Online games, including Arena Warrior, TW, Imperium, Barons, Star Mkt, and more! Sysop: Mark Barrow. [Exp. #95.]

415

Anatomically Correct BBS. (415)856-8425. 24 hrs., 2400. Free, adults only, unique "chat," dozens of articles & message base. Sysop: Howeird. [Exp. #95.]

Art/Online. (415)255-7045. 8-N-1, 1200/2400/9600. Fine Art Forum, local and international email. Sysop: Jim Raridan. [Exp. #95.]

Asian Exclusive Act. (415)338-7592. 24 hrs., 300/1200/2400, 9600 (Hayes only). Intelligent discussion of Asian American issues and events. All welcome, validation req'd. Sysop: Chin Ming Hornbuckle. [Exp. #94.]

Back Door For Men. (415)756-6238. 8-N-1, 24 hrs. Thirty-three lines, alt lifestyles, eighteen and over only. [Exp. #96.]

Back Door For Women. (415)756-6426. 8-N-1, 24 hrs. Five lines, alt lifestyles, eighteen and over only. [Exp. #96.]

BAHUG BBS. (415)326-4486. 8-N-1, 24 hrs., 300/1200/2400. DTP info and help for Heath/Zenith machines. Free. Co-Sysops: Freeman Bradford and Ed Hayes. [Exp. #95.]

BBS Of San Francisco Apple Core. (415)563-8652. 24 hrs., 2400. Lots of fun, supports Apple II and GS computers. [Exp. #96.]

The Big Board. (415)824-7952. 8-N-1, 24 hrs., 300/1200/2400. An alternative way for chubbies to meet chasers. For those without a computer, send a short message to the Sysop, who will put it on the board. Voice: (415)824-8254. Free. Sysop: Cliff Wilson. [Exp. #95.]

California ConneXion Partyline. (415)927-2739. 8-N-1, 23.5 hrs., 300/1200/2400. 9 lines, 400MB, group-chat, worldwide network, 40+ pubs, matchmaking, adults only. Reg required. [Exp. #96.]

The Castle BBS. (415)355-2396. 8-N-1, 2400. Mystic, UFOs, adult, Amiga conferences, Tao hq., Starlight network. Sysop: StarLord. [Exp. #96.]

Charisma. (415)349-6576. 1200–14,400. Full reg. 1st call, 4 nodes, thousands of useful files. All ILink, SmartNet & Intelac conferences. Sysop: Tom Swegles. [Exp. #94.]

The Clipboard. (415)239-0454. 8-N-1, 8 am–5 pm M–F. For Clipper programmers and developers. No fees. Sysop: George Jereza. [Exp. #94.]

ComPUCall. (415)703-1297. 7-E-1, 1200/2400. California's Public Utilities Commission's calendars, decisions, releases. [Exp. #96.]

Computer Show Hotline. (415)340-9370. 8-N-1, 1200/2400. Latest Computer Show info. Complete list of dates, times, locations, and directions. [Exp. #96.]

The CyberDen. (415)472-5527. 24 hrs., 1200–38,400. Usenet/UUCP, worldwide email, industrial/underground music and lifestyle scene. CA's source of cyberdustrial mayhem. [Exp. #94.]

DPNet BBS. (415)788-8663. 8-N-1, 24 hrs., 300/1200/2400. The Electronic Hub of Computing Professionals featuring free consultant job search service, user groups, and technical SIGs. [Exp. #96.]

EpSTAR BBS. (415)454-8206. The only Jewish BBS in Marin, featuring Fido & Keshernet conferences. [Exp. #96.]

Fantasy Network—Mid-Peninsula. (415)365-7002, 321-3661. Online, multiuser, Interactive D&D style, fantasy adventure game. [Exp. #95.]

Fantasy Network—San Bruno. (415)244-9218, 928-4781. Online, multiuser, Interactive D&D style, fantasy Adventure game. [Exp. #95.]

Fantasy Network—San Mateo. (415)573-1063. Online, multiuser, interactive D&D style, fantasy adventure game. [Exp. #95.]

FAUG BBS. (415)595-2479. 8-N-1, 24 hrs., 1200/2400/9600. Amiga info and exchange. All welcome. Sysop: Rich Bremer. [Exp. #96.]

Games & Travel BBS. (415)221-6456. 8-N-1, 24 hrs., 120MB, message base, file base, online games, unbelievable airfares. Sysop: Mr. Traveler. [Exp. #96.]

Guideboard. (415)864-3858. 24 hrs., 300/1200/2400. Multiline, Cabbie's Guide to SF restaurants, doctors, auto repair, etc. Sysop: Dick Schwartz. [Exp. #96.]

HoloNet. (415)421-4656. 8-N-1, 24 hrs., 1200–14,400. See 510 Area Code listing. [Exp. #96.]

IBBS West. (415)564-9998. 8-N-1, 24 hrs., 300/1200/2400/9600. IBM PC and compatibles, latest utilities, adult GIF, free trial. [Exp. #95.]

Inferno BBS. (415)856-8746. 24 hrs., 300/1200/2400/9600. Using Galacticomm Major for twenty-five lines, teleconferencing, email, SIGs, multiuser games, most computer types. Palo Alto Sysop: Jerry Christensen. [Exp. #95.]

InfoGate BBS. (415)967-2356. 1200/2400/9600. FidoNet/RBBS-Net Echomail, files, games, programming topics. Sysop: Ken Thomaston. [Exp. #94.]

The Informer BBS. (415)468-6713. 24 hrs., 2400–14,440. Operation systems, tech specs, conferences, drive & controller specs, driver updates. Call back verifier. Sysop: John Custer. [Exp. #95.]

The Israeli Byte. (415)550-1318. Same day news from Israel, translated to English. Editorials, news analysis, Arab press survey, and more. Free. [Exp. #95.]

Jazz Online. (415)771-3191. 8-N-1, 300/1200/2400. Jazz news, information, and interaction. [Exp. #96.]

Lies Unlimited. (415)583-4102. Politics and polemics. NIRVANAnet. [Exp. #95.]

Mac-House BBS. (415)587-1392. 12 pm–12 am, 300/1200/2400. Mac only files and messages. Reg. required. Sysop: Denver. [Exp. #95.]

MIDI Exchange BBS. (415)771-1788. 300/1200/2400/9600. Casio West Coast FZ shareware library as well as .MID & SynthVoice PD libraries. [Exp. #94.]

The New Dork Sublime. (415)566-0126. 24 hrs., 300/1200/2400. Subliminal News for New Dorks everywhere. Don't die wondering. Sysop: Joseph Griego. [Exp. #94.]

New Earth BBS. (415)878-9157. 8-N-1, 24 hrs., 300/1200/2400. PCPursuitable via CAPAL, national/international echo conferences, files, etc. Sysop: Romano Dikerson. [Exp. #95.]

Pacific Vision BBS. (415)324-3780. 8-N-1, 300/1200/2400. Jobs and Business online, community events, discussion lounge, rent a board. [Exp. #94.]

PC Bear's Lair BBS. (415)572-9626. 24 hrs., 300/1200/2400/9600. Original "bear" BBS for gay hairy/bearded men. No fees. [Exp. #94.]

Peninsular Bulletin Board. (415)571-9259. 24 hrs., 1200/2400/9600. 230MB storage for files, messages, and Echomail. Reg. required. Sysop: Bob Wallace. [Exp. #94.]

Real Estate BBS. (415)362-3974. 8-N-1, 1200/2400. Discussion of Real Estate and all related topics. Sysop: Jay. [Exp. #94.]

Continued

LDSnet

(Church of Jesus Christ Latter Day Saints/Mormon)

LDSnet is a 16-node nationwide network, available locally through **StarShip Yamato**, a general-interest BBS in Santa Rosa (707/433-1536, 2400 baud 8N1, Cy Welch, sysop). While most of the LDSnet echos are available to church members only, an echo called LDS can be read by anyone. LDSnet is also fairly new and is relying on word of mouth to spread throughout the LDS community. It has the distinction of having two nodes (in Colorado) actually located in churches for the use of members.

StarShip Yamato sysop Cy Welch says that some LDSnet users have ambivalent feelings about keeping the echo readership closed, but admits that doing so tends to minimize argumentation based on lack of understanding of articles of LDS faith, although it doesn't necessarily minimize disagreement. For members, echos available include LDS doctrine, LDS research, and LDS singles. StarShip Yamato also carries the Interfaith echo and the Fidonet Mormon echo.

Also of interest:

Body Dharma Online's primary focus is to support the growth and wellness of the body, mind, spirit, and planet. "Spirituality" is one of the principal message groups, and its message areas are diverse across East/West/Pagan tradition. (510/836-4717, 2400 baud 8N1, Barry Kapke, sysop)

Politics & Religion, The Controversy BBS in Concord carries the Open Bible echo, the Catholic Information Network ecumen echo, the Fidonet Mormon echo, LDSnet LDS echo, and the FamilyNet Bible echo. (510/682-5179, 2400 8N1, Gary Moore, sysop)

Serenity in Sonoma carries the LDS open echo, Mormon, a selection of Keshernet echos, Judaica, and Interfaith, among others. (707/576-0397, 2400 baud 8N1, Carol Katz, sysop)

Zen Connection in Marin County is a Fidonet board with a central public forum and the Fidonet Spiritual echo. The BBS is open to all those interested in spiritual growth. It is also a node for OshoNet, a private network available by subscription to followers of Baghwan Sri Rajneesh (Osho). (415/389-9245, 2400 baud 8N1, Premananda, sysop)

Is Your Listing Missing?

Free user group and association listings are limited to the group's name and a ten-word description, including the mailing address and contact phone number. They will be **deleted at six-month intervals** to ensure timeliness and accuracy of information. **Free BBS listings** are also limited to the board's name, sysop's name, and a ten-word description including parameters, baud rate, phone number, and registration fee. Because we have an ongoing problem of boards shutting down without telling us, much to the annoyance of would-be callers and the new phone number's owner alike, we will **delete these listings after they've run three months.**

You can update or renew your listings at any time. If yours is missing, send us a new one! Send your listing information to: US Mail should go to: MicroTimes User Group, 3470 Buskirk Ave., Pleasant Hill, CA 94523. Faxes are welcome at (510)934-2417 or (213)467-5486.

Email can be sent to: microx@well.sf.ca.us. Or MCI:MICROTIMES.

Business Owners, Managers

We want to earn your business!
Call our Dedicated Corporate Hotline

The Bay Area's Largest Apple® Dealer bringing you everyday discount prices since 1983.

Apple® Macintosh® Classic II® 2/40

$1078.99

With up to twice the performance of the Macintosh® Classic®, the System 7 capable personal computer features a 16 MHz MC68030 processor to deliver all the power (even virtual memory) most users will ever need at an affordable price. In stock now.

Apple® Macintosh® LC 2/40

$1239.99

This is the most affordable color Macintosh® you can buy. It's System 7 capable and gives you solid performance. An excellent choice for education or business use. Monitor not included.

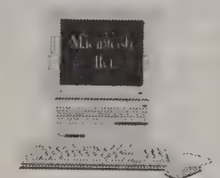
Apple® Macintosh® IIsi 3/40

$1999.99

- Fast 20 MHz 68030 processor
- Color and sound capabilities
- Small footprint
- 3 MB RAM, 40 MB hard disk

Monitor & keyboard not included

Apple® Macintosh® IIci 5/80



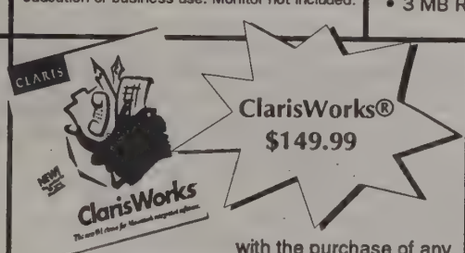
$3099

The Macintosh® IIci 5/80 equipped with a 80 MB Apple hard drive gives you power with room to grow. Up to 70% faster than the Macintosh® IIsi, this computer is an excellent choice for business. Keyboard and monitor not included.

Apple® Personal LaserWriter® NT

$1399.99

- PostScript™ test and graphics
- Built-in AppleTalk® interface
- Prints up to 4 pages per minute
- Compact design



with the purchase of any Macintosh® CPU! The perfect solution for WordProcessing, Spreadsheets, Graphics and Database Capabilities!

Apple® PowerBook™ 100, 140 & 170

The PowerBook™ line offers Macintosh® with notebook convenience to mobile people who want a fully compatible Macintosh® they can take on the road. Each includes a unique stress/fatigue reducing ergonomic design and built-in networking. In stock now.

- **PowerBook™ 100** features: 16 MHz 68000 processor, 2MB RAM and 20MB hard disk
- **PowerBook™ 140** features: 16 MHz 68030 processor and 2 or 4MB RAM plus 20 or 40MB hard disk
- **PowerBook™ 170** features: 25 MHz 68030 processor and math coprocessor, active matrix display, 2400 baud data/9600 baud send-fax modem, 4MB RAM and 40 MB hard disk

PowerBook™ 140 2/20 M0511LL/A

$2089.99

All PowerBook™ accessories available

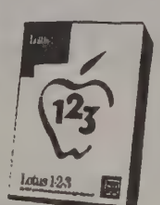
Top Ten Best Selling Software

	Mfg. Sug.	Our Price
1. Microsoft Word	495.00	299.99
2. Microsoft Excel	495.00	299.99
3. Claris FileMaker Pro	299.00	215.99
4. Aldus PageMaker	795.00	538.99
5. Adobe Illustrator 3.2	595.00	374.99
6. Lotus 1-2-3 for Mac	495.00	329.99
7. After Dark	49.95	31.99
8. Quark XPress 3.1	895.00	519.99
9. ClarisWorks	299.00	209.99
10. Promo Pak	742.00	89.95

Includes: WriteNow 2.2, Full Impact 1.1, RecordHolderPlus, and Grammatik Mac 2.0

Quicken® by Intuit
$45.99

Easy to use! Organize your tax record keeping, bill paying and financial records. A real time saver for check writing.



Lotus 1-2-3 for the Macintosh®
$324.99

The famous 1-2-3 spreadsheet now available for the Macintosh®! Makes spreadsheet tasks easier.

FileMaker® Pro by Claris
$215.99

The powerful database manager that puts you in control. FileMaker® Pro takes the hard work out of organizing data saving you time and energy.

Top Ten Best Selling Macintosh Accessories

	Mfg. Sug.	Our Price
1. EMAC Silhouette Mouse	99.95	79.95
2. Power Port (Internal fax send/rec for PowerBooks™)	799.00	559.99
3. Apple OneScanner™	1299.00	1039.00
4. Supra Modem (External)	199.00	99.99
5. Hyper Net (Phone type connector)	59.99	29.99
6. Apple StyleWriter®	399.00	349.99
7. 6 Outlet Gold Surge Protector	69.95	49.95
8. Wrist Protector Pad	19.95	17.95
9. 500 Sheets Paper	9.99	5.00
10. Dove Fax (External)	449.00	299.00

We also offer a full technical support and leasing program. Prices might not include keyboard or monitor. We reserve the right to limit quantities. Not responsible for errors or omissions. Apple, the Apple logo, Macintosh, AppleTalk, StyleWriter, LaserWriter, and Apple OneScanner are registered trademarks of, FinePrint, PhotoGrade, Power Book, and Quadra are trademarks of,. and Classic is a registered trademark licensed to Apple Computers, Inc. PostScript is a registered trademark of Adobe Systems, Inc. All other trademarks are trademarks of their respective manufactures.

COMPUTER SELECTION

Connecting Point® 3D™ COMPUTER CENTERS

Redwood City (415) 368-8828
2001 Middlefield Road (at Woodside Road,
across from Price Club & Orchard Supply Hardware)
M-F 9:30 - 7:00 Sat 10 - 5 Sun 12 - 5

San Francisco (415) 543-9888
201 Mission Street (Mission & Main)
M-F 9:30 - 5:30 Sat 10 - 4
Corporate Hotline: George or Rich

Sunnyvale (408) 746-2288
1202 Apollo Way (Central & Lawrence)
M-F 9:00 - 5:30 Sat 12 - 5
Corporate Hotline: John Werry

Walnut Creek (510)-943-2882
1676 N. California Blvd., (at Cole Ave.)
Left of Max's Opera Cafe
M-F 9:30 - 5:30 Sat. 12 - 5
Corporate Hotline: Dave Pinkham

Authorized Dealer

When you want the best price on Apple® Macintosh® & Laptop computers just call Computer Selection!

BBSes

Realitycheck. (415)567-7043. The truth about what's really going on. NIRVANAnet. [Exp. #95.]

Recovery BBS. (415)255-2188. 300–9600. AA, NA, Al-Anon/ACA, SLAA. Recovery and 12 Step Echos. Fido 125/9. Sysop: Rich Gorlin. [Exp. # 94.]

Robotics Society Of America BBS. (415)752-7228. 24 hrs., 1200. Sysop: Rob Stevens. [Exp. #96.]

Sanctum. (415)753-6861 (300–2400), 73109859, (2400–38,400). Food for thought, discussions, and debate. Voice validation required. [Exp. #96.]

Scubanet BBS. (415)566-0385. 8-N-1, 24 hrs., 2400. Dedicated to the sport of free and scuba diving. Sysop: Charles Eng. [Exp. #95.]

SF Net. (415)824-8747. Connecting SF coffee bars with the RJ11-Table. 16-line chat. Sysop: Wayne Gregori. [Exp. #95.]

ShadowKeep BBS. (415)421-1005. 300–14,400. Files, online games, IBM, Mac, Amiga, C-64, messages, echomail, and more. Free membership. Sysop: Douglas Lorenz. [Exp. #96.]

Shrink Rap. (415)343-7517. 8-N-1, 24 hrs., 1200/2400. Psycho/Hypnotherapy BBS. Sysop: Martin Schaff [Exp. #96.]

SMUG (Stanford-Palo Alto Mac User Group) BBS. (415)856-0210. BBS on Threshold 2000, uses Telefinder GUI. [Exp. #96.]

StarComm BBS. (415)922-5628. 1200/2400. ANSI/ASCII support, files, doors, networking. Subscription system. Sysop: Starbuck. [Exp. #94.]

Starfleet Academy. (Closed) We are moving to Medford. Thank you all for a lot of fun! New number will be posted later. [Exp. #95.]

Starnet Connections. (415)949-3133. 8-N-1, 24 hrs., 300/1200/2400/9600. Los Altos. Email, UseNet, UNIX, and more. Sysop: Richard Mahn. [Exp. #94.]

Symmetrics BBS. (415)382-6679. 24 hrs. Free. [Exp. #96.]

The System. (415)369-5144. 8-N-1. 24 hrs., 300/1200/2400/9600. Accounting, AccPac, BPI, Simply, Telemagic, Novell networks, email. [Exp. #94.]

Tembler BBS. (415)967-8319. 1200/2400/9600. Help for novices, adult. 325MB, instant access. Sysop: Joe Aiello. [Exp. #96.]

Uncle Ds Directory. (415)364-3001. 8-N-1, 24 hrs., 1200/2400, plus Compucom 9600. Software for deaf & education. msgs, file search, classified ads, doorways. No fees. [Exp. #96.]

VA Listings. (415)744-7793. 24 hrs., 300/1200/2400. VA-owned homes for sale. Multiline. Sysop: David Piersall. [Exp. #95.]

VidGame BBS. (415)737-9939. 2400–14,400. GIFs, music files, doors, conferences, utilities. Over 1.2GB. Sysop: George Hassmer. [Exp. #95.]

Wetware Diversions. (415)826-0397. 8-N-1, 24 hrs., 1200/2400. Full Usenet news, 8 lines, San Francisco's Public Access UNIX System. Sysop: Eric Swason (editor@wet.UUCP). [Exp. #94.]

Window World BBS. (415)931-0649. 24 hrs. For people who use Windows-type software. Info., shareware, chat. Sysop: Bob Cram. [Exp. #95.]

510

& The Temple Of The Screaming Electron. (510)935-5845. A safe haven for visionaries and paranoids, 100MB, NIRVANAnet. Sysop: Jeff Hunter. [Exp. #95.]

8 Bit BBS. (510)294-8052. 24 hrs., 300/1200/2400. 8-bit Apple support. No Macs. Livermore. No fees. [Exp. #96.]

AbysS BBS. (510)482-5813. 24 hrs., Hst/DS, Fido World Echo's, GaSpNet ZC, USEGnet RC. Online games, NorCal Telegrad Sup. Sysop: Keymaster. [Exp. #94.]

Amiga Addicts Anonymous (Triple A). (510)528-2867. 1200–14,400. Technical discussions, Skyline BBS. Berkeley. Sysop: Randy Spencer. [Exp. #96.]

AutoCAD BBS. (510)547-5264. 8-N-1, 300/1200/2400/9600. Dedicated to supporting AutoCAD. 900+ related files, message base. Files $50/year. Sysop: Robert Schutz. [Exp. #94.]

Babybrain. (510)532-6248. 24 hrs., 300/1200/2400. Political conspiracy, alternative science. Sysop: Walter Alter. [Exp. #96.]

Bay Area OS/2 BBS. (510)657-7948. 8-N-1, 2400. New OS/2 message and file base. Sysop: Greg Altman. [Exp. #94.]

Bay List BBS. (510)339-1045. 8-N-1, 300/1200/2400/9600. Over 500 listings for the greater Bay Area. Free. [Exp. #95.]

Berkeley WWIV Chess BBS. (510)486-0795. 8-N-1, 1200/2400. Chess, Berkeley politics, Freddy the Pig. No user fee. [Exp. #96.]

Boot To The Head BBS. (510)484-1999. 8-N-1, 1200/2400. Pleasanton. Multiplayer games and fantasy sports. Sysop: Bill Massey. [Exp. #95.]

Breaking Walls; Building Bridges BBS. (510)827-0804. 8-N-1, 24 hrs., 300/1200/2400. Gay/Lesbians, church, AIDS, community Forums, news, counseling. Sysop: Deacon DVMCC. [Exp. #95.]

The CaddyShack. (510)836-2764 (1200–2400), (510)836-1756 (1200–19,200). GIFs, Mac, IBM, Amiga, everything you need and more. Free. Sysop: Mikey. [Exp. #96.]

The Clubhouse BBS, Hayward Chapter. (510)889-1932. Genealogy, WordPerfect, Lotus, dBASE, and national echos. [Exp. #96.]

Compu-Ace RBBS. (510)794-4029. 300–38,400. Files, games, msg., Turbo Pascal Programmers conference, and more. Sysop: Scott A. Mercer. [Exp. #96.]

Daddy's Hideout. (510)779-0291. 8-N-1, 24 hrs., 300/1200/2400. National and international echo conferences and files. Sysop: Rich Bogut. [Exp. #96.]

Delta BBS. (510)778-3714. 1200/2400. New board. Online games, transfer section, astronomy shareware. Sysop: Phantom. [Exp. #96.]

Desert-Well, The Masonic BBS. (510)704-9655. New Age metaphysical-philosophical. People who care. Reg fee. Sysop: Leonardo 32°. [Exp. #95.]

Diablo Valley PC User Group BBS. (510)943-6238. 8-N-1, 24 hrs., 300–38,400. 200MB, echos, newsletter, info on User Group meetings and SIGs. [Exp. #94.]

Excess BBS. (510)827-3274, 671-2408. 8-N-1, 24 hrs., 1200/2400/9600. L-Net, 1000+ files, product listing, online games, no fees. Sysop: Jon Lambert. [Exp. #96.]

Fred Haney & Sons BBS. (510)792-5119. 8-N-1, 24 hrs., 2400. Software, Windows, etc., Fremont. Free. [Exp. #94.]

FrEdMail Oakland. (510)834-2636. 300/1200/2400. K–12 educator and student national email and echo conference. [Exp. #94.]

FrEdMail SLHS—Open Campus BBS. (510)895-0135. 300/1200/2400. K–12 education national email and echo conference, Internet email. [Exp. #94.]

FrEdMail Snlndro. (510)895-1785. 300/1200/2400/9600. Educators only, national email and echo conference, Internet email. [Exp. #94.]

GMV-BBS. (510)264-9052. 24 hrs., 300/1200/2400. Multiline subscription BBS. Teleconference, private chat, email, SIGs, games, and file library for Amiga, IBM, Apple 8-bit, and Mac. Livermore. [Exp. #95.]

Grateful Med BBS. (510)689-0347. 8-N-1, 24 hrs., 1200/2400. Health professionals Fidonet/ADANet. Sysop: TC Dufresne. [Exp. #96.]

HoloNet. (510)704-0158 (Berk/main), 234-4656 (Rich), 351-2226 (SL), 938-4656 (WC). 8-N-1, 24 hrs., 1200–14,400. Full Usenet and Internet, USA Today, Newsbytes, DataNet, and Boardwatch. Multiplayer games, MUDs, IRC, mini-GIFs. [Exp. #96.]

IISME–Net. (510)643-6258. Industry Initiatives for Science & Math Education, Lawrence Hall of Science, K–12 educators and students. [Exp. #94.]

Inferno BBS. (510)226-8606. 24 hrs., 300/1200/2400/9600. Using Galacticomm Major for twenty-five lines, teleconferencing, email, SIGs, multiuser games, most computer types. Fremont. Sysop: Jerry Christensen. [Exp. #95.]

Interactions BBS. (510)832-0560, with numbers in Richmond, Fremont, and San Jose. 12-line real time chat, over 18 only. Email, two subscription levels. Sysop: J. Berg & C. Watson. [Exp. #95.]

The Job Exchange. (510)226-6160. 1200/2400/9600. Computer industry jobs, resumes, etc. Free. [Exp. #94.]

Market Basket BBS. (510)785-4016. 300/1200/2400. Messages, shareware, shopping, small business. Allow seven rings. Sysop: Dina Toyoda. [Exp. #95.]

MSquare BBS. (510)687-EBBS. 8-N-1, 300/1200/2400/9600. Resume/jobs, matchmakers, computers/telecom/network consulting, email, and more. Sysop: MSquare. [Exp. #94.]

The New-Ark BBS. (510)796-0947. 5:00 am–12:00 pm, 300/1200/2400/9600. Tomcat, GIFs, and more. No fees. Sysop: Hiram Wolf. [Exp. #96.]

NightLine BBS. (510)234-1053. Veterans and alias protected self-help conferences. [Exp. #96.]

Omikron BBS. (510)657-8820. 24 hrs., 300/1200/2400. Mac files and messages. Fremont. Free. [Exp. #96.]

The Online Store. (510)687-3227. 8-N-1, 300/1200/2400/9600. Complete inventories for PCs. x86/x87 chips, boards, VDUs, printers, peripherals, plus software. Sysop: Max. [Exp. #94.]

O.S.W.A.D. BBS. (510)796-1676. 24 hrs. 3000 files, adult files, and conversation. [Exp. #96.]

Other World BBS. (510)606-6146. 9600 V.32/V.42. All files. RIMEnet, all users welcome. Sysop: Nick Short. [Exp. #95.]

Psychic Link BBS. (510)849-5939. 24 hrs., 2400. Share with others interested in psychic abilities and energy. International caller base. Shareware. [Exp. #96.]

Sir James BBS W/ Magick Resource Center. (510)430-2865. 300–14,400. Magick, Pagan, Wicca, Text files, Adult, MIDI, Music, Soundblaster, Echo conferences, free. Sysop: Sir James. [Exp. #94.]

Sportz BBS. (510)483-3505. 8-N-1, 24 hrs., 1200/2400. A new sports & fitness oriented board with message bases and doors. Sysop: Kenny. [Exp. #94.]

Terminal One. (510)432-2461. CompuCom 9600. Aviation related, GIF, FLI, VOC, 100MB. [Exp. #94.]

Two Guys BBA. (510)796-1010. 1200/2400. Over 3000 files, adult sections avail. Fremont. [Exp. #96.]

Viper 1 Premium BBS. (510)535-0231, 535-0315. 8-N-1, 24 hrs., 2400/960019,200. Multiline, 900MB, 43 download areas, large adult file areas, games, file scanning facilities online. [Exp. #96.]

Western Dominican BBS. (510)528-3928. 8-N-1, 24 hrs., 2400. PCP CAOAK, Catholic Information Network, Catholic Church documents. Sysop: Vincent Benoit, O.P. [Exp. #95.]

Windows Online. (510)736-8343. Over 2,200 Win3 and 6,000 DOS files, 2GB disk space, 9 lines using USR-DS & Compucom. [Exp. #96.]

Wishing Well BBS. (510)745-7901. 24 hrs., 300/1200/2400. Email, matchmaker, files, 100+ online games. Free. [Exp. #96.]

Wishing Well. (510)745-7901. 24 hrs., 300/1200/2400. Email, matchmaker, files, 100+ online games. Free. [Exp. #94.]

Worldview BBS. (510)676-2919. 8-N-1, 24 hrs., 1200–14,400. Reformed Christian perspective, files/discussion on philosophy, public policy. $49/yr. Sysop: Bill Gram-Reefer. [Exp. #96.]

707

Gridcom BBS. (707)746-8490. 8-N-1, 24 hrs., 14,400. Lrg adult section, LNet HQ. [Exp. #95.]

Recommended BBS. (707)448-2225. 24 hrs., 300/1200/2400. Multiuser games, teleconference, conversational and technical areas, seven lines. All welcome. Sysop: Jay Parangalan. [Exp. #95.]

UNIX Online. (707)792-0402, 795-1721. 24 hrs., Usenet access. For UNIX, Amiga, Mac, and DOS users. [Exp. #96.]

916

Leather First BBS. (916)974-1262, 362-4663. Sacramento's first leather BBS, reg. required, 18 yrs. or older. Sysop: Master Wade & Bob E. [Exp. #95.]

ASSOCIATIONS

Association For Women In Computing. Meetings: 1st Wed., 5:30 pm, San Francisco. Call: (415)979-8450. [Exp. #99.]

Association Of Database Developers (ADD). Meetings: 2nd Thurs., 7:00 pm, Fort Mason Center, San Francisco. Organization for professional xBASE language systems developers. Membership $50/yr or $5/meeting. Call: Lisa, (510)339-6777. General info: JoAnn, (415)863-6706. [Exp. #98.]

The Association For Worldwide Software Support Management. Meetings: 2nd Tues., Milpitas Sheraton. Call: Mikael Blaisdell, (415)865-1323. [Exp. #95.]

The Black Data Processing Associates, Silicon Valley Chapter. Meetings: 4th Thurs., 6:30 pm, Amdahl Corp., Sunnyvale. Call: Doug Jones, (408)737-5999. [Exp. #96.]

Computer Professionals For Social Responsibility. Meetings: 2nd Wed., 7:30 pm, UC Berkeley, Evans Hall, room 608-7. Call: Judy Stern, (510)643-7499. [Exp. #98.]

Data Processing Management Association. Call: (415)978-0868. [Exp. #98.]

IEEE Computer Society, San Francisco Chapter. Meetings: 3rd Wed. Call: (415)905-4400. [Exp. #99.]

Independent Computer Consultants Association, Silicon Valley Chapter. Meetings: 4th Thurs., 6:00 pm. Meetings are open to all. Call: ICCA, (408)492-8888. [Exp. #96.]

Independent Computer Consultants Association. Meetings: 2nd Wed., 6:00 pm. Meetings are open to non-members and members. Call: ICCA, (415)441-2948. [Exp. #95.]

International Computer Professional Association. An association for software professionals who want to work abroad. Call: Tony Rodriguez, (415)252-7467. [Exp. #98.]

International Network Of Women In Technology. Dedicated to significantly increasing the leadership of Women in Technology in industry and government. Call: Dr. Carolyn

Continued

BEST CUSTOMER SERVICE! BEST QUALITY! BEST PRICES!

MICRONICS
486-50/DX2-50/33 / EISA
$2050/1630/1530
486-50/ 486-33 / ISA
$1380

* 8K Byte Cache & Floating Point Unit
* 256K Second level Cache
* 4MB RAM expandable to 64MB
* 1.2MB Teac or 1.44MB floppy drive
* IDE Controller & 2S,1P,1G ports
* 101 Keyboard
* Desktop case with 230W power supply

MCC-USA CAD/CAM/GRAPHICS SUPER WORKSTATION

$3820

* 486-50MHz ISA Mother board, made in U.S.A.
* 256K cache expandable to 1MB.
* 8MB RAM (60ns)
* 1.2M and 1.44M Teac Floppy drive
* MAXTOR LXT-213SY SCSI H/D,15MS
* Fast Cache SCSI Controller w/4MB
* ORCHID Fahrenheit 1280 VGA card
* NEC 4FG(1024x768 non-interlaced)
* Big tower case w/250w Power supply
* 2S, 1P, 1G ports * Mitsumi or KeyTronic 101 Keyboard
* Logitech Mouseman BUS or Miceosoft 400PPI BUS mouse

486-33MHz
$3265

OPTIONS:

NEC 3FGx 15" 0.28 1024X768	-$105
Viewsonic V-7 17" 0.28 1280x1024 non-int	+$310
Nano 9080i 16" 0.28 1280x768 non-int	+$220
Mitsubishi HL-6605ATK 16" 0.31 1280x1024 non-int	+$180
Sony CPD-1304 14" 0.25 1024x768 non-int	-$245
Adaptec 1542B SCSI Controller	-$105
OPTA Monalisa TI34020 4MB VRAM 24-bit color	+$1325
Maxtor XT4170S 154MB 14ms SCSI	+$0
Fujisu M2622 330MB 12ms SCSI	+$520
Maxtor P0-12s 1.02GB 13ms SCSI	+$1230

5 YEARS LABOR AND 1 YEAR PARTS WARRANTY

MICRONICS
386-33 $795

* 64K cache
* 1MB RAM expandable to 16MB
* Teac 1.2 MB or 1.44 MB drive
* IDE controller (2FD/2HD)
* 2 serial & 1 parallel ports
* AT case with power supply
* 101 keyboard

486-50 / 33 MHz ISA System

* 64K cache
* 1MB RAM expd to 32MB on-board
* Teac 1.2MB or 1.44MB drive
* 2 serial & 1 parallel ports
* AT case with power supply
* 101 keyboard

$1350 / 915

386-33MHz 64K Cache System

* 1MB RAM
* 1.2MB or 1.44 MB floppy drive
* IDE Controller (2F/2H)
* 2S, 1P, 1G
* AT case with power supply
* 101 keyboard

386-40MHz 64K Cache **$595**
386-25 No Cache **$485**
386SX-20 / 16 **$435 / $395**

$585

PROFESSIONAL HARDWARE AND SOFTWARE TECHNICAL SUPPORT

MOTHER BOARDS

MICRONICS
486-50 EISA&LOCAL BUS /256K $1695
486DX2-50 EISA&LOCAL BUS $1275
486-50 ISA W/256K CACHE $1445
486-33 EISA&LOCAL BUS /256K $1175
486-33 ISA W/64K CACHE GCP $1030
386-33 64K CACHE GCP-ASIC $455

MCC-USA
486-50 ISA W/256K CACHE $995
486-33 ISA W/256K CACHE $645
486-33 ISA W/64K CACHE $595

OTHERS
486-33 EISA W/64K CACHE $1330
486-50 ISA 256K CACHE $885
486-33 64K CACHE, W/CPU $575
386-33 64K CACHE, W/CPU $310
386-40 64K CACHE, W/CPU $325
386-25 NO CACHE, W/CPU $255

MONITORS

NEC
5FG 17", 0.28, 1280X1024 NI $1455
4FG/3FGx 15".28,1024X768 $810/705

SONY
1304S 1024X768 NI, 0.25 $565

MITSUBISHI
MIT6605ATK16",0.31,1280X1024 $975

NANO
T560i 17",0.26,1280X1024 NI $1895

VIEWSONIC
V-8 20" 1280X1024 NON-INT $1710
V-7 17" 1280X1024 NON-INT $1125
V-6 14"1024X768 NI, 0.28 $365
V-5+ 14" 1024X768, NI, 0.25 $550
V-5E 14" 1024X768, NI, 0.28 $450
V-4E 14" 1024X768, 0.29 $320
V-2 14" 640X480, 0.28 $290
V-1 14" 640X480, 0.39 $230

VIDEO CARDS
OPTA MONALISA W/4MB,24-bit $1625
TI34020, 16.7 million colors per pixel
ORCHID FAHRENHEIT 1280 $279
W/1MB, W/SIERRA,72Hz,32k colors
ORCHID PRO-DESIGNER IIS W/1M $189
W/SIERRA,72Hz,32k colors
DIAMOND STEALTH 1280 W/1MB $295
W/SIERRA, 72Hz,32k colors
ATI GRAPHICS ULTRA 1M, 70Hz $495
GENOA 6400A 70Hz 512K $145
TRIDENT 1024X768, W/1M $95
ET-4000 1024X768, W/1M $135
GENERIC SVGA 1024 W/512K $75
GENERIC VGA 800X600 W/256K $58

ACTIX
SPECTRUM W/1M,32,768 COL. $175
QUANTUM VRAM W/1M $279

I/O CARDS
2S,1P,1G $20
RS-232 CARD/PRINTER CARD $17/18

TAPE BACK-UP

COLORADO
DJ-10 (40,60,120MB) $205
DJ-20 (250MB) $279
AB-10 EXT. ADAPTER FOR DJ-10 $69
FC-10 CONTROLLER 500K/1M $88
CK-17 CABEL $12

PRINTERS

HP LASER
IIP+/IIIP/III (W/TONER) $809/1015/1495
MEMORY CARD FOR IIP+,III,IIIP,IIID
1M $85, 2M $120, 3M $162, 4M $205

NEC
SILENT WRITER-95 $1489

CITIZEN
200GX/GSX130/145 $165/245/389

PANASONIC
KXP-1180/1123/1624 $145/235/365

HARD DISK DRIVES

CONNER
CP-3000 IDE 40MB 28MS $225
CP-3104 IDE 100MB 25MS $305
CP-30104 IDE 120MB 19MS $365
CP-3204 IDE 200MB 16MS $580

SEAGATE
ST-157A IDE 40MB 28MS $225
ST 1102A IDE 89MB,19MS $315

MAXTOR
XT7040A 40MB 19MS IDE $225
XT7080A 80MB 17MS IDE $305
XT7120A 120MB 15MS IDE $375
XT4170E/S 154MB 14MS $595
XT4380E/S 338MB 16MS $995
XT8760E/S 676MB 16MS $1350
LXT213 213MB 15MS IDE/SCSI $595
LXT340 340MB 15MS IDE/SCSI $990
PO-12S 1.02GB 13MS SCSI $1775
P1-17S 1.47GB 13MS SCSI $2245

FUJITSU
M2622 IDE/SCSI3.5"330M,12MS $1C95
M2624 IDE/SCSI3.5"520M,12MS $1255
M2263 SCSI, 51/4" 687M,16MS $1465
M2266 SCSI, 51/4" 1.2GB,16MS $2130

QUANTUM
LPS52 IDE/SCSI 52MB,19MS $235/255
LPS105 IDE/SCSI 105M,19MS $345/365
LPS120 IDE/SCSI 16MS $395
LPS240 IDE/SCSI 16MS $645/690

FLOPPY DRIVES
TEAC 1.2MB 5.25" $62
TEAC 1.44MB 3.5" $60
TEAC 2.88MB 3.5" $119

DRIVE CONTROLLERS

DTC
7280 MFM 1:1 2FD/2HD $69
7287 RLL 1:1 2FD/2HD $79
6280 ESDI 1:1 2FD/2HD $125
6282-24 ESDI 24Mbit/SEC,2F/4H $165
3280 SCSI 7HD/2FD $125
3290 SCSI EISA 7HD/4FD W/1MB $625
W/4MB $829

ULTRASTOR
ULT 12F/32 32K CACHE ESDI $165
ULT-14F SCSI w/kit $260
ULT-22C EISA ESDI w/1M up
16MB, 33Mb/s $695
ULT-22F EISA SCSI w/64k cache $495
ULT-24F EISA ESDI w/64k cache $520
Support FAST SCSI II

CSC
FASTCACHE-64 SCSI 7H4F 1MB $385
UP TO 64MB CACHE W/REGULAR
SIMM, NEAR ZERO ACCESS TIME

ADAPTEC
1542B KIT SCSI $280
AHA-1740/Kit EISA SCSI $470/505

IDE CONTROLLER
IDE CONTROLLER W/2FD&2HD $25
IDE CONTROLLER W/4FD&2HD $45
IDE W/2FD/2HD&2S,1P,1G $45

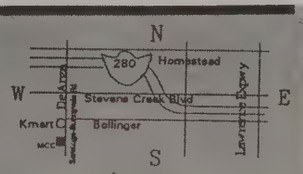
MODEMS
24/96 FAX MODEM (S&R) INTL $95
24/96 F/MODEM (S&R)EXT MNP5 $149
2400 INTL MODEM 65

MULTIMEDIA & CD-ROM
SONY CDU 53511 INTL BUS kit $380
SONY CDU 54101 INTL SCSI kit $525
SONY CDU 7205 EXTL BUS kit $565
SONY CDU 7211 EXTL SCSI kit $635
PRO AUDEO SPECTRUM $265
CREATIVE MULTIMEDIA KIT $605

MONTHLY SPECIALS

* **CD-ROM SOFTWARE PACKAGE: 5 DISKS (Encyclopedia, World Atlas, Reference Library, Time table of History, Wing Comander/ Secret Missions)** **$109**
* **SVGA MONITOR (1024x768, .28, Non-glare) W/512K SVGA CARD** **$349**
* **HP LASER PRINTER MEMORY CARD W/1MB 2MB $119, 3MB $159, 4MB $202** **$85**

MCC Systems, Inc.
1035 Saratoga-Sunnyvale Rd., #4B
San Jose, CA 95129
(408)255-4471
Fax (408)255-4348
M-F 10-7
Sat 10-4



WE GUARANTEE THAT WE HAVE THE BEST PRICE IN TOWN!

Please Call For Price Update

$1050

486-50 MHz w/64K Cache

Intel 80486 50 MHz CPU

- 1 MB Expandable to 32 MB on board
- 8K Internal Cache
- 64K External Cache exp. to 256K
- Shadow RAM
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Internal HD/FD Controller
- 2 Serial, 1 Parallel
- Tower or Desktop case w/power supply
- 101 Enhanced Keyboard
- Supports MS/DOS, OS/2, Unix, Xenix

$765

486-33 MHz w/64K Cache

- 1 MB Expandable to 32 MB on board
- 8K Internal Cache
- 64K External Cache exp. to 256K
- Landmark=152
- Shadow RAM
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Internal HD/FD Controller
- 2 Serial, 1 Parallel
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard
- Supports MS/DOS, OS/2, Unix, Xenix

Optional w/128K Cache . .'775

$515

486SX-20 MHz

- 1 MB Expandable to 32 MB on Board
- 8K Internal Cache
- Shadow RAM
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Interleave HD/FD Controller
- 2 Serial, 1 Parallel
- 101 Enhanced Keyboard
- Tower or Desktop case w/power supply
- Supports MS/DOS, OS/2, Xenix, Unix

OPTIONAL:

w/ system purchase

- [illegible] Monitor [illegible] '90
- VGA Monitor (640x480) 16 Bit Width FDD Card '235
- Super VGA Monitor (1024x768 0.39) w/SVGA Card 512K '275
- Super VGA Monitor (1024x768 0.28) w/SVGA Card 1MB '325
- Nec/Idek Tuned 3VGA Monitor (1024x768 .28) w/ 1MB Card '395
- Orchid Prodesigner II's 1MB w/SONY 1304 '710

$345

386-SX 25 MHz

- Landmark=36
- 1 MB Expandable to 8 MB
- Shadow RAM
- 1:1 HD/FD Controller
- 1.2 or 1.44 MB Floppy Drive
- 2 Serial, 1 Parallel
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard
- Supports MS-DOS, OS/2, Unix, Xenix

$325

386-SX 16 MHz

- Landmark=21
- 1 MB Expandable to 8 MB
- Shadow RAM
- 2 Serial, 1 Parallel
- 1:1 Interleave HD/FD Controller
- 1.2 or 1.44 MB Floppy Drive
- 80387-SX Socket
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard
- Supports MS-DOS, OS/2, Unix, Xenix

NOVELL.

Sales . . .
Custom Design Service . . .
Installation and Maintenance . . .
Extended Software Support . . .

available through
STEPFORD
(415) 553-3837

$265

286-20 MHz 0 Wait

- Landmark =21
- 512K Expandable to 4 MB
- Real Time Clock
- 8 Expansion Slots
- 80287 Socket
- 1:1 HD/FD Controller
- 1.2 or 1.44 MB Floppy Drive
- Tower or Desktop case w/power supply
- 101 Enhanced Keyboard

$250

286-12 MHz 0 Wait

- 6/12 MHz 0 Wait
- 512K Expandable to 4 MB
- C & T Chip Set
- EMS 4.0 Built-In
- Shadow RAM
- Landmark=16
- 1:1 HD/FD Controller
- Real Time clock
- 1.2 or 1.44 MB Floppy Drive
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard

BELMONT SYSTEMS INC.

(Belmont Computer Products)

(415) 598-9058

FAX **(415) 598-0186**

Hours: M-F 9-6 Sat 10-3

1555 Industrial Road, San Carlos, CA 94070

PRICE IS NOT ALL WE OFFER:

BEST QUALITY • STRONGEST SUPPORT STAFF • 6 YEARS BUSINESS EXPERIENCE

$465
386-40 MHz w/64K Cache

- 1 MB Expandable to 32 MB on Board
- 64K Static Cache Memory
- Shadow RAM
- 1.2 or 1.44 MB Floppy Dr.
- 1:1 Interleave HD/FD Controller
- Socket for 80387
- 2 Serial, 1 Parallel
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard
- Supports MS-DOS, OS/2, Unix, Xenix

$455
386-33 MHz 64K Cache

- 1 MB Expandable to 32 MB on Board
- 64K Static Cache Memory
- Landmark=57
- Shadow Ram
- 1.2 or 1.44 MB Floppy Drive
- 1:1 Interleave HD/FD Controller
- Socket for 80387
- 2 Serial, 1 Parallel
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard
- Supports MS-DOS, OS/2, Unix, Xenix

$395
386-25 MHz

- Landmark=36.7
- 1 MB Expandable to 8 MB
- Shadow RAM, Page Interleaved Memory
- Socket for 387, Weitek 1167
- 1:1 Interleave HD/FD Controller
- 2 Serial, 1 Parallel
- 1.2 or 1.44 MB Floppy Drive
- Tower or desktop case w/power supply
- 101 Enhanced Keyboard
- Supports MS-DOS, OS/2, Unix, Xenix

- 44 MB 28MS Hard Dr. '175
- 85 MB 15MS '270
- 105 MB 18MS '290
- 130 MB 15MS. '330
- 212 MB 16MS '550
- 340 MB 15MS. '885
- 510 MB 12MS. '1150

Keyboard

Mitsumi 101 Key	'39
Keytronic 101 Key	45
Maxiswitch 101 Key	45
OmniKey 101/102/Ultra	73/73/102

Misc.

287-8/10	'55/55
387-SX	105
387-25/33	150/165
150W (XT) Power Supply	35
230W Power Supply	48
Window 3.0 w/mouse	65
Logitech Mouse Man	65
Logi Trackman Serial/Bus	70/75
DFI Mouse (3 Button, Micro Soft Compatible)	35
AT Deluxe Case	48
Mini Vertical Case w/Power Supply	65
Mid Tower Case w/Power Supply	95
Full Tower Case w/Power Supply	125
Colorado 120 MB Tape Back-Up	205
Colorado 250 MB Tape Back-Up	275
RAM DIP/SIPP/SIMM	CALL

Floppy Drive

TEAC/Epson 1.2 MB	'60
TEAC/Epson 1.44 MB 3.5"	60

Printer

Panasonic KX-P 1180 w/Cable	'155
Panasonic KX-P 1123 w/Cable	205
Panasonic KX-P 1624 w/Cable	345

Interface Card

Mono Graphic Card	'20
VGA Card (16 bit 800x600)	45
Paradise VGA+ 16 (1024x768 OEM)	75
OAK SVGA (1024x768 512K)	55
Trident VGA w/1 MB RAM	85
Orchid Pro Designer II S w/1 MB	CALL
Orchid Pro Designer II S w/Sierra Ramdac	$BEST
Orchid Fahrenheit (1280x1024)	CALL
SpeedSTAR Plus/hi-color 1M	140/165
Video 7 VRAM II w/1M	325
AT M I/O (2S, 1P, 1G)	25
WA3 FD/HD Controller	65
1:1 FDC/HDC (MFM)	65
IDE Card w/cable	25

Motherboard

286 6/12 MHz	'75
286 8/20 MHz	95
386-SX 16 MHz	135
386-SX 25 MHz	155
386-25 MHz	215
386-33 MHz 64K Cache	265
486SX-20 MHz	330
486-33 MHz w/64K Cache	585
486-50 MHz w/64K Cache	885

Hard Disk

Conner 3000 40 MB	'175
Western Digital 85 MB (18ms)	275
Quantum 85 MB 15ms	275
NEC 105 MB	300
Conner 30104 120 MB (18ms)	340
Quantum 120 MB 15ms	340
Maxtor 7120A 130 MB 15ms	340
Conner 170 MB	435
Conner 210 MB (16ms)	560
Quantum 240 MB	570
Conner 3504 510 MB 12ms	1150

Modem

2400 Baud (Int)	'45
2400 Baud (Ext)	75
Fax Modem (4800 FAX, 2400 modem)	65
Fax Modem (9600 FAX, 2400 modem)	75

Monitor

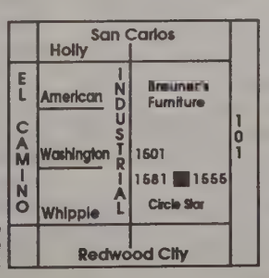
Hyundai Mono	'75
14" Flat Screen	95
Hyundai VGA .52	195
Super VGA (1024x768) 0.39	235
Super VGA (1024x768) 0.28	275
Non-Interlaced SVGA Monitor	325
Sony 1304S	560
Sony 1604	995
Nanao 9080i	985
NEC 3FGX/4FGX	625/775

TERMS and CONDITIONS:

- Company, Government P.O.'s Welcome
- UPS Shipping Daily

ll prices and contents subject to change w/o notice
ll brand names are registered trademarks
o. Term on credit approval

Welcome to visit our new 4500 Sq. ft. showroom! Computers, Monitors and Printers are now on display!



Located in the San Carlos Commerce Center Office Park

ASSOCIATIONS

Turybfill, (415)336-1007. Email: Carolyn Turybfill@Eng.Sun.COM. [Exp. #97.]

Networkers' Toastmasters. Meetings: Every Tues., noon–1:00 pm, 2560 N. First St., San Jose. Call: Mona Kellem, (408)534-1255. [Exp. #98.]

North Bay Systems Professionals. Meetings: 3rd Wed., 7:00 pm, Holiday Inn, Terra Linda, 1010 Northgate Dr., San Rafael. NBSP provides a forum and network for system professionals. Call: Harry Chapman, (415)291-0174. [Exp. #98.]

Robotics Society Of America. Meetings: 2nd Mon., 8:00 pm, Exploratorium Library, San Francisco. Call: Brad Smallridge, (415)550-0588. [Exp. #99.]

SBEA (South Bay Entrepeneurs Association). Meetings: Twice weekly. Financial success and personal growth through teamwork. Call: (408)727-5950. BBS: (408)267-8325. [Exp. #96.]

Society For Technical Communication, Berkeley Chapter. Meetings: 2nd Wed., 6:00 pm, Yenching Restaurant, 2017 Shattuck Ave., Berkeley. Call: Rich Julius, (415)837-0397. [Exp #96.]

Society For Technical Communication, East Bay Chapter. Meetings: 1st Thurs. Call: Corinne Stefanick, (510)769-8931. [Exp. #95.]

Society For Technical Communication, San Francisco Chapter. Meetings: 3rd Wed. Call: (415)985-7121. [Exp. #97.]

Software Entrepreneurs' Forum. Call: Barbara Cass, (415)854-7219. [Exp. #97.]

United Sysops Association. Meetings: 2nd Wed., 7:00 pm, Coco's, 1035 S. Mary Ave., Sunnyvale. Organization of bulletin obard sysops and users. Call: Bill Strouse, (408)739-9081. [Exp. #98.]

Women's Computer Society. Meetings: Last Tues. Call: Tanya Halepota, (415)949-3936. [Exp. #98.]

USER GROUPS

ACCOUNTING SOFTWARE

Computer Associates User Group. Meetings: 1st month of quarter on 3rd Wednesdays. Holiday Inn, 1500 Van Ness. Come share ideas and information with other local users of Computer Associates Accounting Software! Call: Beth E. Markus, (415)864-6770. [Exp. #96.]

AMIGA

3rd Dimension—Image/Lightwave User Group. Meetings: 1st & 3rd & Mon., Computer Showcase, 2739 Geary Blvd, SF. Call: Ollie, (415)863-8792. [Exp. #94.]

A500 Programming Team. A club for those Amiga users who can write programs for A500. Call: Michael, (408)270-4596. [Exp. #95.]

AAA—Amiga Addicts Anonymous. Meetings: 3rd Tues., Concord Water District Bldg., 1311 Concord Ave. Classes, BBS, pub. dom. disks, info line. Call: (510)935-0829. [Exp. #96.]

ACCESS—Amiga & Commodore Computer Enthusiasts Society. Meetings: 2nd Thurs., 7:00 pm, Livermore Airport Terminal. Call: Paul, (510)829-6053. [Exp. #98.]

Amiga Nation. Meetings: 1st Tues., 7:30 pm, 324 Springs St., Suisun. Call: (707)421-2283. [Exp. #96.]

AWEST Amiga Users. Meetings: 1st Wed., 7:00 pm, Computer Showcase, 2739 Geary, SF. Call: (415)584-8406. [Exp. #96.]

FAUG—First Amiga User Group. Meetings: 1st Tues., 7:00 pm, Hyatt Palo Alto, 4290 El Camino Real, Palo Alto. Call: Mike Fisher, (415)855-9426, BBS (415)595-2479. [Exp. #99.]

TOGA—The Other Group Of Amigoids. Meetings: Varying Sat., 12:30 pm, Milpitas Library, 40 N. Milpitas Blvd. PD disk librarian, Santa Clara. Call: Lawrence Brown, (408)984-6036. Usenet: garyweir@netcom.com. [Exp. #99.]

APL

APL Bay Area User Group. Meetings: 2nd Mon., 7:00 pm. Call: Tibor Horvath, (415)283-5611. [Exp. #95.]

APPLE

Tri-Valley Apple II User Group. Meetings: 1st Wed., 7:00 pm, Glendale Federal Bank, 3101 Crow Canyon Place, San Ramon. Come and learn more about your computer. Support II+, IIc, IIe, IIgs. Call: (510)828-0959. [Exp. #99.]

APRICOT

Apricot User Group, East Bay Chapter. For Apricot and other IBM-compatible PCs, hardware/software assistance & info. New members welcome. Call: Ron, (510)828-9643. [Exp. #95.]

AT&T

AT&T Computer User Group, North Bay. Meetings: 1st Wed., informal discussion at 6:00 pm, program begins at 7:00 pm, San Francisco AT&T Bldg., 50 Fremont St. MS-DOS and UNIX. Call: Jim Lansing, (415)885-6631 or Joe Mahoney, (415)584-6510; BBS (415)829-6027. [Exp. #99.]

AT&T Computer User Group, South Bay. Meetings: 2rd Wed., informal discussion at 6:00 pm, program begins at 7:00 pm, Sunnyvale AT&T Bldg., 1090 E. Duane Ave. MS-DOS and UNIX Call: Joe Lipsig, (408)733-6522; BBS (408)946-7734. [Exp. #99.]

AT&T UNIX Computer User Group, South Bay. Meetings: 4th Wed., new user education at 6:30 pm, program begins at 7:00 pm, Sunnyvale AT&T Bldg., 1090 E. Duane Ave. Call: Thad Floryan, (408)985-7100; USENET, thad@cup.portal.com. [Exp. #99.]

ATARI

Bay Area Atari Users Group (BAAUG). Meetings: 1st Mon., 7:30 pm, Agnews Aud., 2nd fl., San Jose. Call: Joe Fischer, (408)988-3065. [Exp. #95.]

Santa Clara Atari User Group. Meetings: 2nd Wed., 7:00 pm, San Jose Computers Showroom, 1278 Alma Court, San Jose, near First and Alma. Call: Ron Reade, President, (408)225-7162. BBS: (408)848-6032, 300/1200/2400. [Exp. #99.]

ST Programming Team. A club for those Atari users who can write programs for ST/STE. Call: Michael, (408)270-4596. [Exp. #95.]

COMMODORE

ACCESS—Amiga & Commodore Computer Enthusiasts Society. Meetings: 2nd Thurs., 7:00 pm, Livermore Airport Terminal. Call: Paul, (510)829-6053. [Exp. #98.]

CAVE—Commodore Amiga Video Enthusiasts. Meetings: Every other Sat., 8:00 pm, 304 Springs St., Old Suisun. Call: Ron, (707)421-2283. [Exp. #95.]

Commodore Hayward User Group. Meetings: 2nd Sat., 2:00 pm, Palma Ceia Park. (510)793-2514. [Exp. #94.]

Cupertino Chapter Of 64/More Commodore User Group. Meetings: 3rd Sun., 6:00 pm, Cupertino Library. Call: (408)262-9334. [Exp. #94.]

CWEST Commodore 64/128. Meetings: 3rd. Wed., 7:00 pm, Fort Mason. For info: 1564 Waller #B, San Francisco, 94117. Call: (415)626-9946. BBS, (415)552-9320. [Exp. #96.]

CP/M

San Francisco Computer Society. Meetings: 7:00 pm, Laguna Honda School, 1350 7th Ave., San Francisco. Call: Ralph Gallegher, (415)929-0252. [Exp. #96.]

dBASE

ADD dBASE Software SIG. Meetings: 3rd Tues, 7:30 pm, Fort Mason Center, San Francisco. Led by Miriam Liskin. Call: JoAnn, (415)863-6706. [Exp. #96.]

ADD Fox Software SIG. Meetings: 1st Thurs., 7:00 pm, Fort Mason Center, San Francisco. Call: JoAnn, (415)863-6706. [Exp. #96.]

East Bay Database User Group. Meetings: 3rd Sun., 1:30 pm, 2415 Grant St., Berkeley. Call: David Chilcott, (510)653-1303. [Exp. #96.]

DESKTOP PUBLISHING

San Mateo County Ventura Publisher User Group. Meetings: 3rd Mon., 6:45 pm, San Mateo ROP, 1800 Rollins Rd., Rm. 14, Burlingame. Call: Elinor Cruze, (415)366-5317. [Exp. #99.]

FREEDOM, PRIVACY, AND TECHNOLOGY

BMUG SIG On Freedom, Privacy, And Technology. Meetings: Last Sun., 2:00 pm, BMUG office, 2055 Center St., Berkeley. Call: Judi Clark, (510)549-2684. [Exp. #94.]

IBM AND COMPATIBLES

Alameda Computer User Group. Meetings: 2nd Wed., 7:30 pm, Social Hall, Temple Israel, Island Dr. and Mecartney Rd. Providing an informal forum for both Macintosh and PC users to explore questions about hardware and software. Call: Dan Meyers, (510)521-3323. [Exp. #99.]

Diablo Valley User Group. Meetings: 1st Thurs., Cardondolet High School, Treat Blvd. and Winton Ave. in Concord. Call: (510)943-1637. [Exp. #96.]

EastBay FOG. Meetings: 2nd Wed. All microcomputers, MS-DOS, CP/M. Call: (415)272-9099. [Exp. #94.]

Golden Gate Computer Society (GGCS). Meetings: 4th Mon., 7:30 pm, San Rafael Community Center. Call: Steve Greenberg, (415)485-0136. [Exp. #95.]

IBM Technical SIG. Meetings: 2nd Thurs., 7:00 pm, Cubberley Community Center, 4000 Middlefield Rd., Room H-1, Palo Alto. Sponsored by Software Entrepeneurs' Forum. Call: Mike Schmit, (408)244-6826. [Exp. #98.]

Micromate-CP/M-DOS User Group. Meetings: 1st Thurs., 7:30 pm, Chabot Observatory, 4917 Mountain Blvd., Oakland. Call: Ed Miller, (510)376-1611.

PC BasicS: Silicon Valley Computer Society SIG. Meetings: 3rd Mon., 7:30 pm, 847 W. Maude Ave., Sunnyvale. Talks presented by Rich Wingerter of Zip Consulting & Design. Call: (415)326-2435. [Exp. #96.]

PC Programming Team. A club for those IBM users who can write programs for 286, 386, PS/2 PC. Call: (408)270-4596. [Exp. #95.]

Peninsula Computer Club. Meetings: 2nd Thurs., 7:30 pm, Social Room, 222 Laurel St., San Carlos. DOS and CP/M libraries. Call: Larry Welling, (415)593-9981. BBS (415)571-9259. [Exp. #97.]

Pro Players. Club for all games and utilities users. Write: PO Box 84144, Hung Hom Bay Post Office, Hong Kong. [Exp. #95.]

San Francisco Business Computers. Meetings: 4th Thurs., 5:30 pm. For those who use computers in business. Visitors $5. Call: (415)788-5338. [Exp. #95.]

South Bay WordPerfect User Group. Meetings: Monthly, dates vary. Saratoga Community Library. Free, Call: Martin Van Derpool, (408)238-8434. [Exp. #98.]

KNOWLEDGE-MAN

Bay Area KnowledgeMan (And Guru) User Group. Meetings: 1st Tues., 6:30 pm., JNZ, Inc., 826 Las Trampas Rd., Lafayette. A forum for discussion and info concerning mdbs products, esp. KnowledgeMan and Guru. Call: (510)947-4878. [Exp. #97.]

MACINTOSH

A32 Macintosh User Group. Meetings: 2nd Sat., 10:00 am, GTE Cafeteria, 100 Ferguson Dr., Mountain View. Call: (408)263-0398 days. [Exp. #97.]

BMUG West. Meetings: Last Mon., 6:30 pm, San Francisco Exploratorium. Call: (510)549-BMUG. [Exp. #95.]

BMUG—Berkeley Macintosh User Group. Meetings: Every Thurs., 6:00 pm, Physical Sciences Lecture Hall, UC Berkeley Campus. Call: (510)549-BMUG. [Exp. #95.]

International Macintosh Users Group (IMUG). Meetings: 3rd Thurs., 7:00 pm, 10500 N. De Anza Blvd., Cupertino. A forum for multilingual computing. Call: Sachiko Berry, (408)862-7724 (weekdays). [Exp. #98.]

Macintosh SIG. Meetings: 3rd Tues., 7:00 pm, Apple Cafeteria, City Center 4, De Anza and Rodrigues, Cupertino. Sponsored by Software Entrepreneurs' Forum. Call: Jeff Cherniss, (408)356-9901. [Exp. #98.]

SMUG (Stanford-Palo Alto Macintosh User Group). Meetings: 1st Mon., 7:00 pm, Syntex Conference Center, 3401 Hillview Ave., Palo Alto. Call: (415)328-4933. [Exp. #99.]

SPC Apple User Group. Meetings: 2nd Wed., 7:30 pm, Fremont Main Public Library. The Society for Prevention of Cruelty to Apple Computers Users Group supports all Apple and Macintosh computers. Call: Jim Weil, (415)796-7169. [Exp. #95.]

Women's Macintosh User Group. Meetings: 2nd Tues., 7:00 pm, ComputerWare, Palo Alto. Call: Buffy Joseph, (415)792-2840 or Tayna Halepota, (415)949-3936. [Exp. #96.]

MULTIMEDIA

BMUG Multimedia SIG. Meetings: 2nd Mon., 6:00 pm, Call: (510)549-BMUG. [Exp. #95.]

International Interactive Communications Society—IICS. Meetings: 2nd Wed., 7:30 pm, Call: IICS Hotline, (415)328-7318. [Exp. #96.]

Multimedia SIG. Meetings: 1st Thurs., 7:00 pm, Cubberley Community Center, 4000 Middlefield Rd., Palo Alto, Rm. H-1. SIG of Software Entrepreneurs' Forum. Call: Patrick Milligan, (408)257-1547. [Exp. #99.]

Multimedia User Group. Meetings: 1st Wed., 7:00 pm, 600 Townsend St., 1st Fl., San Francisco. A forum to learn about the multimedia industry,

Continued

CERTIFIED QUALITY & SERVICE

486/ 386 Basic Systems

Include:
- Motherboard & CPU
- 1.2Mb or 1.44Mb Floppy Drive
- 2S, 1P, 1G Ports
- 1Mb RAM Installed
- Internal Clock/Calendar
- AT Case + 200W P.S.
- IDE 1:1 2HD/2FD Controller
- Math Coprocessor Socket
- 101 Key Enhanced Keyboard

All Systems Come with 1 year Parts & Labor

Basic System with 1 MB 486-50 w/64K Cache	$ 1299
Basic System 486-33 EISA w/Cache	$ 1338
Basic System with 1 MB 486-33 w/Cache	$ 818
Landmark 54 MHz, Basic System w/ 1 MB 386-33 w/64K Cache	$ 498
Landmark 30 MHz, Basic System 1 MB 386-25 w/64K Cache	$ 448
Landmark 21MHz, Basic System with 1 MB 386-25SX	$ 358
Landmark 16MHz, Basic System with 1 MB 386-16SX	$ 338

COMPLETE SYSTEMS

486-50MHz w/Cache
- Basic System Configuration
- 120 MB Hard Disk IDE
- 14" SVGA Monitor (1024x768)
- with VGA card 512K

$ 1868

486-33MHz w/Cache
- Basic System Configuration
- 120 MB Hard Disk IDE
- 14" SVGA Monitor (1024x768)
- with VGA card 512K

$ 1388

386-40MHz w/64KB
- Basic System Configuration
- 120 MB Hard Disk IDE
- 14" SVGA Monitor (1024x768)
- with VGA card 512K

$ 1128

386-33MHz w/64KB
- Basic System Configuration
- 120 MB Hard Disk IDE
- 14" SVGA Monitor (1024x768)
- with VGA card 512K

$ 1098

386-25MHz DX
- Basic System Configuration
- 80 MB Hard Disk IDE
- 14" SVGA Monitor (1024x768)
- with VGA card 512K

$ 968

386-16MHz SX
- Basic System Configuration
- 40 MB Hard Disk IDE
- 14" SVGA Monitor (1024x768)
- with VGA card 512K

$ 768

TCI PLUS BASIC SYSTEMS

ISA 486 - 33 MHz w/ 64K Write Back Cache MIPS 15.2 $ 1188	ISA 386 - 40 MHz w/ 64K Write Back Cache MIPS 9.8 $ 818
ISA 386 - 33 MHz w/ 64K Write Back Cache $ 768	ISA 386 - 25 MHz w/ 64K Write Back Cache $ 728
ISA 386SX - 25 MHz $ 548	ISA 386SX - 16 MHz $ 498

MONITORS & ACCESSORIES

MONITORS	
14" IMPRESSION SVGA DOT .39	~~$ 225~~
14" PACKARD BELL SGVA DOT .28	$ 295
14" CLUB AT SGVA DOT .28	$ 345
14" CLUB NON-INT SGVA DOT .28	$ 385
SONY 1304 & 1604 SGVA	$ 555 / $ 1085
NANAO 9070U & 9080I SGVA	$ 898 / $ 1068
20" Nanao 9500 (72Hz Non Interfaced)	$ 1895
NEC 3FG, 4FG	$ 658/ $ 795
MODEMS	
Modem 2400 Baud Rate	$ 45
Modem 2400 Baud Rate External	$ 75
Modem 2400 & Fax 9600	$ 85
Modem 9600 Baud Rate (Internal / External)	$ 345 / $ 375
ACCESSORIES / MISCELLANEOUS	
Sound Blaster /Sound Blaster Pro	$ 115 / $ 205
Windows 3.0	$ 45
Windows 3.0 and Mouse	$ 60
MS-DOS 5.0	$ 55
Zenix Cordless Mouse	$ 65
Logitech First Mouse	$ 45
Logitech Mouseman (Serial or Bus)	$ 65 / $ 75
Logitech Trackman (Serial or Bus)	$ 75 / $ 85
Logitech Scanner 256 Grayscale	$ 285
Microsoft Mouse	$ 65
Everex AT Tape 120Mb / 240Mb	$ 225 / $ 280
Colorado Tape 120Mb / 250Mb	$ 225 / $ 280
AT Case + Power Supply 200W	$ 65
Mini Tower Case + Power Supply 200W	$ 70
Medium Tower Case + Power Supply 230W	$ 105
Full Size Tower Case + Power Supply 230W	$ 145
MOTHERBOARD	
TCI-486-50MHz w/64K Cache	$ 988
TCI-486-33MHz w/64K Cache	$ 628
TCI-386-40MHz w/64K Cache	$ 328
TCI-386-25MHz	$ 278
TCI-PLUS 486-50-64K Cache	$ 1588
TCI-PLUS 486-33-64K Cache	$ 985
TCI-PLUS 386-40-64K Cache	$ 595

1373 S. BASCOM, SAN JOSE , CA 95128
Tel. (408) 288-6937 • Fax. (408) 288-7120
Business Hours
Mon - Sat : 9:30 AM - 6:00 PM

TOWER COMPUTER, INC.

80486, 80386, 80386SX are trademarks of Intel
All other products and brand names are trademarks of their respective companies
Prices and Availability Subject to Change without Notice

MASTERCARD & VISA WELCOME
100% FINANCING AVAILABLE

USER GROUPS

get your questions answered, and meet with fellow professionals. Sponsored in part by MacroMind/Paracomp/Authorware. [Exp. #99.]

MUSIC

MuSIG. Meetings: 1st Sun., 2:00 pm. Various locations. Based in Palo Alto. A network of people helping each other learn about computers and music: MIDI, hardware, software, performance, and programming. Call: (415)858-1493. AppleLink: UG0390. [Exp. #99.]

NETWORKING

NetSIG. Meetings: 4th Tues., 7:00 pm, Novell Sunnyvale. Networking SIG for Software Developers. SEF group. Call: Skip Addison, (408)747-4356. [Exp. #97.]

NEURAL NETWORKS

Neural Networks SIG. SIG for Neural Networks and its applications. Call: Kumar, (408)946-5835. [Exp. #94.]

NEXT

BANG—Bay Area NeXT Group. Meetings: 3rd Wed., 7:00 pm, Terman Aud., Stanford. Presentations and lectures. [Exp. #97.]

Berkeley NeXT Users Group. Meetings: 2nd Tues., 7:00 pm, 2055 Center St., Berkeley. Call: Bernt Wahl, (510)644-0139. [Exp. #98.]

NOVELL

Silicon Valley Novell User Group. Meetings: 3rd Wed., 6:30 pm, Coco's, 1305 S. Mary Ave., Sunnyvale. Call: Bill Strouse, (408)739-9081. BBS: (408)739-8753. [Exp. #99.]

PARADOX

Bay Area Paradox User Group—BAPALS. Meetings: 4th Tues., 4:00 pm, SF State University Downtown Campus. Forum for users and developers of all levels. Call: Patricia Hickey, (415)883-1020. [Exp. #96.]

PEN COMPUTING

Pen Systems SIG. Meetings: 4th Wed., 7:00 pm, Cubberley Community Center, Rm. H-1, 400 Middlefield Rd., Palo Alto. SIG of Software Entrepreneurs' Forum. Addresses all issues of interest for developers of pen computing software. Call: Bill McApline, (415)348-2257 or SEF at (415)854-7219. [Exp. #99.]

R:BASE

Peninsula R:Base User Group. Call: Don Whitecar, (415)592-5033. [Exp. #95.]

R:Base Users Group Of Oakland. Meetings: 2nd Thurs., even months, 9:00 am, 519 17th St., Downtown Oakland. Newsletter, tips & techniques, database design issues, and more. Call: (510)451-5316. [Exp. #97.]

SMALLTALK

Northbay Smalltalk/V User Group. Call: (415)362-4283. [Exp. #97.]

SQL

SQL_Forum/Bay Area SQL Database Server User Group. Meetings: Once a month in downtown SF. Oracle, SQL Server, SQLBase, and more. Call: Robert Gentry, DBBS, Inc. (415)583-3000. [Exp. #94.]

TELECOMMUNICATIONS

BMUG Telecom SIG. Meetings: Last Wed., 8:00 pm. How to use your modem, terminal programs, and the BMUG BBS. Call: (510)549-BMUG. [Exp. #95.]

TEXAS INSTRUMENTS

Santa Clara Valley TIPC Group. Meetings: 4th Thurs., 7:00 pm, Magnolia Inn, 176 S. Bernardo, Sunnyvale. Newsletter, library. Call: Thor, (415)386-5237. [Exp. #95.]

TI-99/4A. Meetings: 2nd Sat., Oakland. Call: Fred, (510)530-8335. [Exp. #95.]

THEOS

Theos User Group. Call: (510)785-7355. [Exp. #96.]

UNIX/XENIX

N. Cal UNIX Users. UNIX user group now forming: AT&T UNIX, Coherent, SCO UNIX/XENIX, and LINUX. Write: Just Computers, PO Box 355, Cotati, CA 94931. [Exp. #99.]

UNIX SIG. Meetings: 2nd Tues., DEC, 800 W. El Camino Real, Mountain View. Sponsored by Software Entrepreneurs Forum. Call: Priscilla Rowe, (415)776-0513. [Exp. #98.]

VIDEO TOASTER

Video Toaster User Group. Meetings: Last Thurs., 7:00 pm, HT Electronics, 275 N. Mathilda Ave., Sunnyvale. Special guests, equipment demos, hands-on workshops, plus info/tips on new System 2.0. $4 for non-members. Call: Andrew Timmins, (408)244-9692. [Exp. #99.]

WINDOWS

WinSIG. Meetings: 3rd Thurs., 7:00 pm, Cubberley Community Center, Rm. H-1, 4000 Middlefield Rd., Palo Alto. Windows SIG of the Software Entrepreneurs' Forum. Call: Fran Finnegan, (415)929-7386, or Barbara Cass, (415)854-7219. [Exp. #97.]

MICROTIMES
CLASSIFIEDS WORK!
Call Dana at
(510)934-3700 for details.

STAY AHEAD, UPGRADE YOUR SYSTEMS TO STANDARD

MEMORY & EXPANSION BOARDS

IBM PS/2

Mdl 30/286 2 MB Kit $99
Mdls 50 & 70 1 MB/2 MB/4 MB. . . . $53/97/211
Mdl 80 1 MB/2 MB/4 MB $53/128/228
Mdls 90 & 95 2 MB/4 MB. $125/225
2-14 MB MicroChannel Exp Board for Models 50; 60; 70; 80 . . . . . $325

AST

Premium II, 386SX/16; SX/20; 386/25; 33 1 MB/4 MB $58/226
Premium Exec 386 Notebook 4 MB $225

COMPAQ

DeskPro 286e; 386/20; 386/20e; 386/25; 386/25e; 386s-16
1 MB/4 MB Modules. $89/228
1 MB/4 MB Exp. Boards. $150/310
DeskPro 386/33; 486s; SystemPro
2 MB/8 MB/32 MB. $125/425/2890
DeskPro 'N'-Series; 'M'-Series; 386SX/20
1 MB/2 MB/4 MB. $60/102/225
Notebook LTE386SX/20; SLT/286
1 MB/4 MB $125/375
Notebook LTE/286; SLT/386
1 MB/2 MB/4 MB. $115/175/350

APPLE

Powerbook 100; 140; 170
2 MB/4 MB/6 MB. $299/410/555
1 MB x 8 80ns MAC SIMM. $35
4 MB x 8 80ns MAC SIMM $130

SUN

IPX; ELC 4 MB/16 MB. $211/750
SPARC I & II SIMM 1 MB/4 MB $45/156

Please call for memory not listed.
Available memory for:

ACER; ALR; AT&T; DEC; DELL; Epson; Everex; HP; NCR; NEC; NEXT: Packard Bell; Panasonic; Sharp; Silicon Graphics; Tandon; TI; Toshiba; Zenith.

LASER PRINTER MEMORY

HP II; IID; IIP; III; IIIP; IID
1 MB/2 MB/4 MB. $80/125/199
HP IIISI 1 MB/4 MB. $69/195
Available Memory for Panasonic 4450; 4420; 4455; IBM 4029; 4019; OKI 400; 800; 820; Canon LBP4; Epson EPL6000; EPL7000; TI Microlaser; QMS PS410 and Much More!

Kingston IBM XT/AT; PS/2 50 & 60 Processor Upgrade
SX/NOW! 20 MHz/25 MHz. $350/425

Speed up your calculation with a **Math Co-Processor.** Stocking full line of **INTEL** and **CYRIX** Brand.

Need More Storage Space?
Available Hard Drives from **Quantum, Conner, Maxtor, Seagate.** Please have SPECS READY WHEN CALLING.
40 MB TO 1.2 GB. IDE/SCSI Controller Cards Available

"Bare Bone" Mother Boards
386/16dx, 386/16SX, 386/20, 386/25, 386/33, 486/25, 486/33. Cache Memory Available

We welcome your inquiries and will accept PO's from Fortune 500 companies and gov't institutions. We are classified as **"Small Disadvantage Business."**

Terms: Accept MC/VISA, Prepayment, COD, Cashier Checks. 15% restocking on non defective returns after 30 days. Prices are subject to change.

OPEN MON-FRI 8am-6pm • SAT 10-5

CyberTron Components
"Upgrading with Quality"

TEL: (408) 294-8700 Fax: (408) 971-1255

MICROWORLD

1514 University Ave., BERKELEY, CA 94703 - INFO (510) 845-2000

The thing to ask yourself is whether you want the lowest common demoninator computer or something a little bit better. At Microworld we speak English and we put together systems you will be proud to own. Our American made computers are custom made with better than average components and excellent support!

Optimized Windows DTP/CAD System

Orchid's new paired video board and mother board is graphically 18 times the speed of a standard 16 bit card in WINDOWS and four times in DOS. This system really blazes for Windows or AutoCad. Call in and get your Dream Machine for premium performance at a low price. Only:

$2500

'486-33 mhz/64k cache
120 meg 15 ms drive/2 floppies
Super Pro Orchid U.S. 486 mother board w/Farenheit *D* 1280x1024
1 meg **32 bit** Video Card with .28 dot pitch Super VGA monitor
Super VGA Options: .28 dot pitch Noninterlace Viewsonic 6 add $60.
.25 dot pitch add $150
NEC 15" 3FGX lorad add $350
NEC 4FG add$450 SONY 17" add $700
Magnavox 20" 1280x1024 add $1000
NEC 21" add $2595
Call for other combinations!

2 year factory warranty on Orchid Components

Quality Assured Novell Tested!

ORCHID

Your best buy today is a **Microworld 486** with American made 6 layer mother board. You're getting a free math co-processor and triple the speed of a 386. From the heart of Silicon Valley, home of personal computers!

486/ 33/ 256k SVGA 120 HD,
Medium tower, complete system,
2 floppies,4 meg, Keytronics 101,
Win, mouse, DOS 5, 3 day burn in
Buy American!! **$2250**

At Microworld we specialize in building high performance US Made machines for extraordinarily low prices. If performance is what you are looking for we recommend an ORCHID 486/50 with 256k Cache, 16 megs of 4 meg SIMM 70 nanosecond RAM, a 340 meg Maxtor Hard Drive with a **4 meg Cache** IDE controller (.026 ms average access), Logitech Mouse & Windows 3.1 with MSDOS 5, Dual Hi Density Floppies, Keytronics 101 keyboard and an NEC 4FG 72 hz 15" flat screen monitor. Your choice of Medium or Mini-Tower or Baby AT cases. This system **screams** yet comes in at a budget price of:

MADE IN THE USA

$4995

All systems are complete with serial/ parallel /& game ports.

486-33/120hd
Mono $1795
SVGA 2 floppy & mouse $1995
4 megs/1meg VGA/AT-IO

486-50/120hd
Mono $2295
SVGA $2495
4 megs/1meg VGA/IO

386-33/ 40hd
Mono $995
SVGA $1195
floppy/ 101kb/ AT-IO

386-25/ 40hd
Mono $945
SVGA $1145
floppy/ 101kb/ AT-IO

386-25sx/ 40hd
Mono $749
SVGA $949
floppy/ 101kb/ AT-IO

286-16/40hd
Mono $589
VGA $755
floppy/ 101kb/ AT-IO

SUPER SYSTEMS

Super Station System

- Intel 80486DX/50MHz CPU.
- 16MB memory standard.
- 256KB secondary Cache memory.
- 340MB IDE HDD
- 4MB Cache controller (Up to 16MB).
- TEAC 1.2MB & 1.44MB FDD.
- 2 serial / 1 parallel port, 101 Keyboard.
- Hercules SUPER STATION 3D .
  - TI 34020/32MHz 32-bit graphics processor
  - Intel i860 64-bit RISC processor
  - Real time animation, 24-bit color
- Full size vertical case.

Super Computer Performance !!
- CAD, Autoshade, 3D studio
- Renderman, Animation

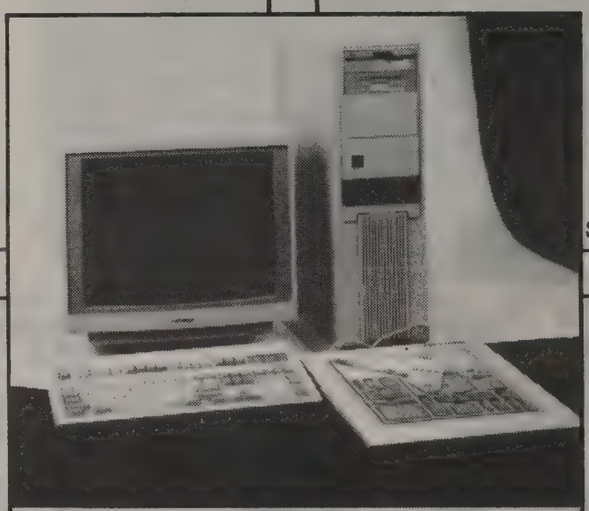
S/W & Monitor not included **$7,595**

CAD Workstation

- Intel 80486DX/33MHz CPU.
- 8MB memory standard.
- 256KB secondary Cache memory.
- 200MB IDE HDD
- TEAC 1.2MB & 1.44MB FDD.
- 2 serial / 1 parallel port, 101 Keyboard.
- #9GXI graphics card. (L23)
  - TI 34020/32MHz 32-bit graphics processor
  - 1280X1024 resolution w/60 or 72Hz ref.
- Calcomp 12X12 digitizer.
- Full size vertical case.

Ultimate CAD/CAM Workstation !!
- CAD/CAM, Windows 3.0
- X-Windows

S/W & Monitor not included **$3,795**



No Headaches ! Your S/W Installed Free !

ALR EISA System

- ALR EISA 486DX/33MHz.
- 5MB memory.
- 200MB SCSI HDD.
- TEAC 1.2MB & 1.44MB FDD.
- SCSI EISA 1MB Cache controller (Up to 4MB).
- EISA graphics card
  - TI34020/32MHz 32-bit graphics processor.
  - 2MB VRAM and 4MB DRAM.
  - 1280X1024 res., 256 color.
- Mini desktop case, 101 keyboard.
- Upgradable to 486DX/50MHz.

ALR
Advanced Logic Research, Inc.

True EISA System!!
- UNIX, X-Windows, Windows 3.0
- CAD/CAM, Network

S/W & Monitor not included **$4,895**

True Color System

- Intel 80486DX/33MHz.
- 8MB memory.
- 64KB Cache memory.
- 200MB IDE HDD.
- TEAC 1.2MB and 1.44MB FDD.
- OPTA "Monalisa" 24-bit graphics card
  - TI34020/32MHz 32-bit graphics processor.
  - 1024X768, 24-bit color w/Windows3.0.
  - 72Hz high refresh rate, 4MB VRAM.
- MicroTek 600Z flatbed color scanner.
  - 24-bit color or 8-bit grey scale.

16 million colors at your finger tips !!
- Windows 3.0, 3D studio, color prepress seperation.
- Image processing

S/W & Monitor not included **$4,995**

Hercules

Number Nine
Computer Corporation
Excellence in PC Graphics

OPTA

MICROTEK
Better Images Through Innovation.

CAD / GRAPHICS

Hercules

SUPERSTATION 3D

- TI 34020/32MHz processor
- Intel i860 RISC processor
- Max 1280x1024, Max 24-bit color
- 33 MIPS peak, 27 VAX MIPS
- Drivers for ACAD, Windows3.0

$3,995

HEWLETT PACKARD

Authorized AVAR

- Vectra Personal Computers
- Impact and InkJet Printers
- LaserJet Printers
- Graphics Plotters
- ScanJet Scanners

CALL

matrox

IMPRESSION AT/S

- TI34020/32MHz based card
- Dual full page display
- 1152x882, 1024x768 with 24-bit col.
- Easy install, no-jumper design
- Monitor color calibration software

CALL

Number Nine Computer Corporation

Excellence in PC Graphics

#9GXI (L22)

- TI34020/32MHz graphics card
- 1024X768, 256 col. 72Hz refresh rate
- Built-in VGA or Pass through
- Upgradable to 1280x1024, 256 col.
- 5 years warranty

$995

AITech

Video Capture

- Max. capture at 640X480 resolution
- Real time display at Windows 3.0
- 16 bit capture color
- S-VHS option available
- NTSC output board available

$895

OPTA

MONALISA

- TI34020/32MHz graphics card
- 1024X768, 16.7 million col. 72Hz ref.
- Built-in VGA
- Optional JPEG compression...$895
- 24-bit ADI driver available

$1,695

MONITORS

21" Hitachi (21AP)	$2,695
21" IDEK 5221	$2,095
21" Toshiba	$2,145
20" Magnavox	$1,495
20" Viewsonic 8	$1,695
20" Hitachi CM2087	$1,895
20" SONY 1936	$2,495
20" Mitsubishi 6945	$1,995
17" IDEK 5217	$1,045
17" Viewsonc 7	$1,165
17" NEC 5FG	$1,445
17" SONY 1604S	$1,025
16" Nanao 9080i	$1,095
16" Mitsubishi 6605	$945
15" NEC 4FG	$785
14" Viewsonic 5E	$455
14" Sampo Alphascan	$395

GRAPHICS CARD

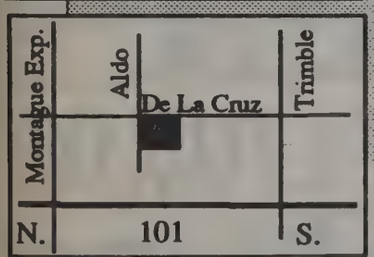
Calcomp 3402	$2,495
SPEA 1280	$1,795
#9GXI L25	$1,595
#9GXI L24	$1,395
#9GXI L23	$1,345
#9GXI L22	$995
Volante AT 1200	$1,995
Volante AT 800	$495
Liberty VGS20	$795
Liberty VGS10	$395
HP IGC 10	$895
HP IGC 20	$1,995
Hercules GB 1024	$595
Hercules 1024+2	$795
Metheus 1104+16	$995
Metheus 1104+256	$1,095
Metheus 1224	$1,295
Matrox Impression LC	Call
Matrox Impression LC/E	Call
Matrox Impression AT	Call
Matrox MG 3D Ultra	Call
Diamond Stealth	$315
ATI Graphics Ultra	$545
ATI 8514 Ultra	$495
ATI Graphics Vantage	$375
Definicon CAD RACE	$395

PLOTTERS

Calcomp 2036(A-E)	$4,295
Calcomp 2024(A-D)	$3,295
HP Design Jet (A-E)	$8,995
HP 7596C(A-E)	$6,995
HP 7595C(A-E)	$5,995
HP 7576A(A-E)	$4,195
HP 7575A(A-D)	$3,395
HP 7570A(C-D)	$2,695
HP 7550B(A-B)	$2,995
HP 7475A(A-B)	$1,395
HP 7440A(A)	$1,095
H.I. DMP162(A-E)	$3,995
H.I. DMP161(A-D)	$3,095
Enter SP2800(A-E)	$3,195
Enter SP1800(A-D)	$2,595
Enter SP600(A-B)	$695
Ioline LP4000-8(A-E)	$3,895
Ioline LP3700-1(A-E)	$2,995
Ioline LP3500(A-D)	$2,295
Roland GRX400(A-E)	$4,095
Roland GRX300(A-D)	$3,445
JDL 950-2M(A-D)	$5,395
JDL 850XP-1M(A-C)	$2,895
OCE 1835C(A-D)	$4,595
OCE 1824C(A-D)	$3,995
OCE G1022(A-B)	$895

DIGITIZERS

Calcomp 44X60	$1,995
Calcomp 36X48	$1,795
Calcomp 24X36	$1,595
Calcomp 18X24	$1,325
Calcomp 12X18	$645
Calcomp 12X12	$295
Summa S. MG2 42X60	$3,595
Summa S. MG2 36X48	$2,995
Summa S. MG2 24X36	$2,595
Summa S. MG2 17X24	$2,195
Summa S. 2 12X18	$595
Summa S. 2 12X12	$325
Kurta XLC 42X60	$1,795
Kurta XLC 36X48	$1,395
Kurta XLC 24X36	$1,295
Kurta XLC 18X24	$1,095
Kurta XLP 12X18	$595
Kurta XLP 12X12	$345



JEMINI ELECTRONICS

The house of CAD & Graphics Equipment

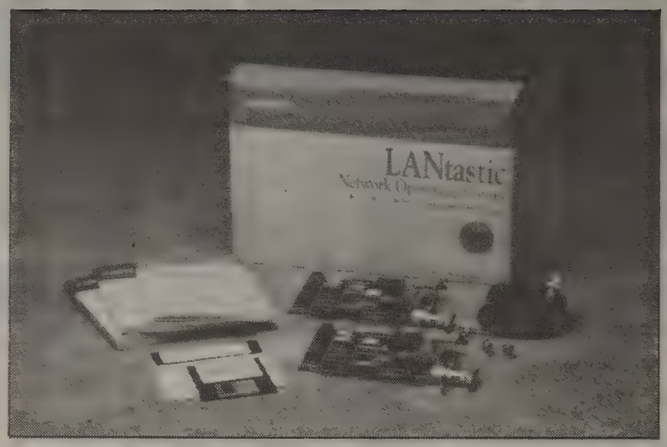
3448 De La Cruz Blvd.
Santa Clara, Ca 95054
Phone (408)727-9986 Fax (408)727-7687
M - F : 9 - 7 Sat : 10 - 4

MEDIA VISION

CalComp
A Lockheed Company

Liberty

VIDEO SEVEN



Artisoft's LANtastic provides small- and medium-sized businesses a low-cost network alternative.

Continued from page 46

for managing the access to data from multiple users. For example, what happens if two users try to change the same piece of data simultaneously?

Some problems will occur only under very specific conditions and go undetected until the user stumbles upon them. When alerted, the manufacturer will make the necessary program modifications and release a program update. The consultant's role is to distinguish between these program glitches and user errors, and recommend the appropriate action.

Lynn feels that the benefits of networked accounting data entry and access from multiple workstations outweigh the problems. And she is very thankful to be working with Roger. "We're one of the largest volume resellers of AccountMate in the Bay Area, so we have to know it well," he says. "When it comes to recommending a network, we want one that is easy to install and maintain so that we can concentrate on the accounting programs. We didn't want to spend the time, money, and energy necessary to become proficient with Novell."

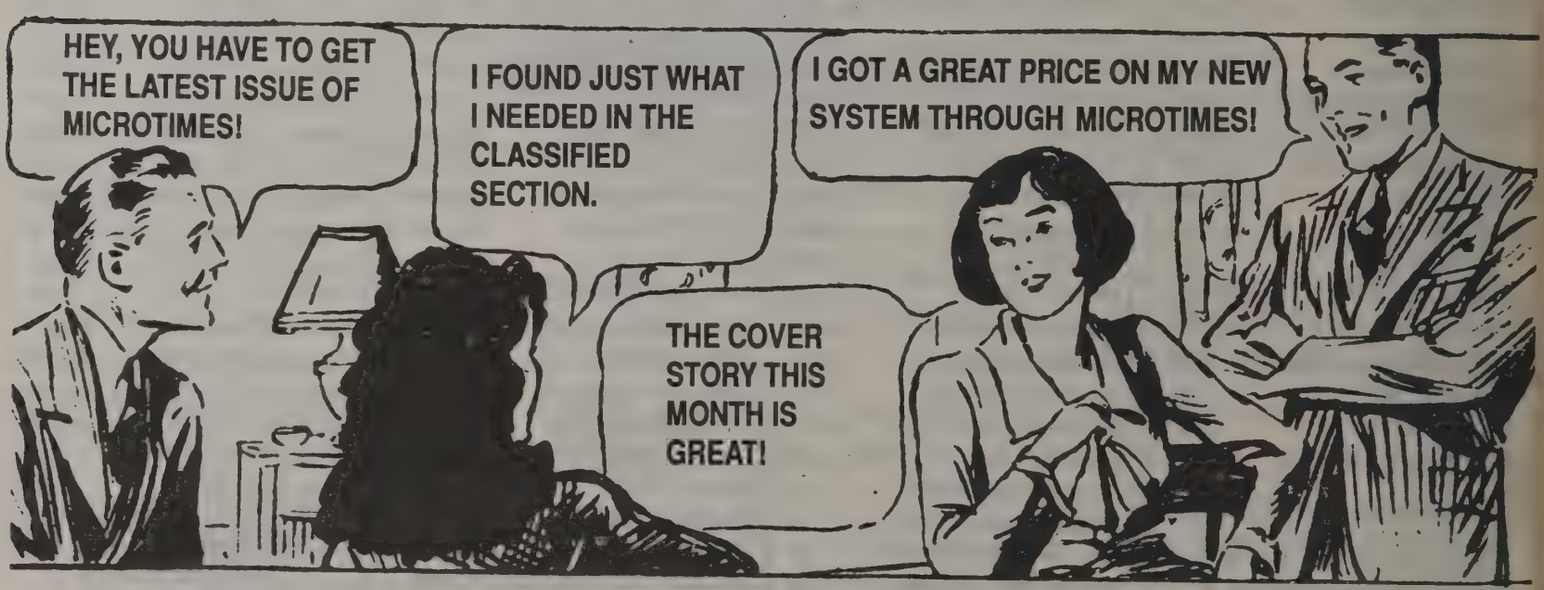
CD-ROM-based information is among the newest applications to benefit from peer-to-peer networks. Many manuals and reference books for law, tax, accounting, demographic, and real estate are frequently updated and are now available on CD-ROM. Most peer-to-peer networks allow CD-ROM drive access to be easier and less expensive than it is with server-based networks.

CHOOSING TO CONNECT

Even with the cheaper, less complex peer-to-peer networks, it is important to do pre-installation planning and evaluation, and post-installation fine tuning. The relative simplicity of these packages allows the user to do more of this work and/or results in less labor time on the part of a professional network installer. Add this to the cost savings realized by not needing a dedicated server, and the difference in price for this type of network operating system versus a server-based product, and the amount is substantial. Even Novell has now realized this, with the release of their own NetWare Lite peer-to-peer product.

Typical peer-to-peer installations cost between $200 to $500 per computer for the network interface board, program, cabling, installation, and initial training. This brings networks into the reach of many small businesses, and the expense is often offset by the additional efficiency that the network allows. ■

DON'T BE LEFT OUT...


HEY, YOU HAVE TO GET THE LATEST ISSUE OF MICROTIMES!
I FOUND JUST WHAT I NEEDED IN THE CLASSIFIED SECTION.
I GOT A GREAT PRICE ON MY NEW SYSTEM THROUGH MICROTIMES!
THE COVER STORY THIS MONTH IS GREAT!

PICK UP YOUR COPY TODAY!

MICROTIMES™

BAYCOMPUTER, INC.

3rd Anniversary Celebration Sale

1252 So. Abel Street, • Mipitas, CA 95035 • Tel: (408) 956-8014 • Fax: (408) 956-8013

Store Hours: Mon - Fri: 9:30AM - 6:00PM • Sat: 10:00AM - 5:00PM

Landmark 181 Mhz, Basic System w/ 1MB

EISA 486DX-50 W/ 256K Cache — **$1745**

Made in USA, Basic System w/ 1MB

BAY 486DX-50 W/64K Cache — **$1140**

Intel Clock Double CPU, Basic System 1 MB

BAY 486DX2-50 W/64K Cache — **$CALL**

Made in USA, Basic System with 1 MB

EISA 486DX-33 W/64K Cache — **$1250**

Made in USA, Basic System with 1 MB

BAY 486DX-33 W/64K Cache — **$785**

Landmark 64 MHz, Basic System with 1 MB

BAY 386DX-40 W/64K Cache — **$470**

Landmark 53 MHz, Basic System with 1 MB

BAY 386DX-33 W/64K Cache — **$450**

Landmark 33 Mhz, Basic System with 1 MB

BAY 386DX-25 MHZ — **$385**

Landmark 33 Mhz, Basic system w/ 1MB

BAY 386SX-25 MHZ — **$345**

486 • 386 • 286

BASIC SYSTEM INCLUDE

MotherBoard & CPU
1MB of Memory • 1.2MB or 1.44MB Floppy Drive
2 Serial - 1 Parallel Port • Case with Power Supply
1:1 2HD / 2FD Controller • 101 Enhanced KeyBoard
Free Installation

AT/GRAPHICS (408) 956-9691

Upgrade to 256 or 512 KB Cache for 486 or 386 Systems available.

HARD DISKS	
40 MB IDE (28ms)	$200
80 MB IDE (16ms)	$285
120 MB IDE (16ms)	$365
200 MB IDE (16ms)	$565
340 MB Maxtor IDE	$970
520 MB IDE (13ms)	$1150
100 MB/200 MB for MAC	$380/585

VIDEO CARDS	
VGA (16 BIT, 800X600)	$40
SVGA (1024X768X16), U.S.A	$80
Trident VGA, 1MB	$80
ProDesigner IIs 1MB 72 Hz	$Best
ProDesigner IIs Sierra DAC (32 K Color)	$Best
Orchid Fahrenheit 1280 VGA (FAST)	$Best
Orchid Fahrenheit 1280/D Local Bus	$Best
ProDesigner IIs /D Local Bus 32 Bit	$Best
ProDesigner IIs EISA Bus 32 Bit	$Best
Diamond Speed Star Plus 1MB	$150
Diamond Stealth VRAM 1 MB	$270

MOTHERBOARD MADE IN U.S.A.	
Orchid Superboard 486/50 mhz 256K cache	$1420
Orchid Superboard 486/33 mhz 64K cache	$ 930
Mylex EISA 486-33 mhz 128 k cache	$1480
Mylex ISA 486-33 mhz Cache	$ 920
Micronics EISA 488-33 mhz	$1430
Micronics ISA 486-33 mhz	$ 920

MONITORS	
VGA (640x480)	$240
SuperVGA (1024x768,0.28mm)	$290
SuperVGA (1024X768, Non-int)	$365
NEC 3FGX 15" Flat Screen	$675
NEC 4FG 15" Flat Screen	$790
NEC 5FG 17" Flat Screen	$1395
SONY 1304s (1024x768, non-int)	$565
NANAO F550 17" (non-int)	$1150

PRINTERS	
Panasonic KX-1180	$158
Panasonic KX-1124i	$280
Panasonic KX-1624	$360
Epson Printers	$CALL

MISCELLANEOUS	
IDE HD/FD Controller	$20
ESDI HD/FD Controller	$135
SCSI Future Domain HD/FD	$125
SCSI Adaptec 1522 HD/FD	$180
SCSI Adaptec 1542 B Kit	$280
9600B/2400B FAX/ Modem	$85
2400B Modem (int.)	$50
HiRES Mouse	$25
Logitech MouseMan	$65
Microsoft Windows + Mouse Logitech	$70
Sound Blaster	$110
Tape Back-Up Drive 120/250	$195/$295
Sound Blaster Pro	$190

MASTER CARD

VISA

- One year warranty on parts & labor on systems
- We accept VISA & Mastercard
- Prices & availability subject to change w/o notice
- Prices based on cash prices
- Intel are Trademarks of Intel Corporation
- Government, Firms, School Purchase Order are Welcome

SPECIAL

Orchid 486-50 w/256k + Fahrenheit 1280 D-1MB 32 BIT LOCAL BUS

$1,540

Orchid 486-33 w/64k + Fahrenheit 1280 D-1MB 32 BIT LOCAL BUS

$1,100

Continued from page 159

and then back to Wyoming.

MEANWHILE...

Barlow, however, has never been known for his adherence to the orthodox path. Furthermore, for all the heroic efforts of the hotline team, it was risky to assume that the 170 would be restored to health and Wyoming before Barlow was off to Barcelona and points north.

Besides, exhibiting a syndrome familiar to PowerBook owners, Barlow found the prospect of doing without one in the interim unbearable. Even if it weren't for the fact that his PowerPort faxmodem was still in the 170, and a whole lot of necessary files were on its hard drive.

But even on the other side of the Pacific, Barlow's social engineering skills were in top form. Which explains why, at 6:30 in the morning at SFO, on the day Barlow was passing through, a mutual pal from Regis McKenna handed me a large black bag containing some unsuspecting young Apple marketroid's PowerBook 100, floppy drive, and assorted accoutrements. "I'm *sure* John will take good care of it," she said hopefully. "Unfortunately," she added, "it doesn't have a modem. But I'm sure he can deal with that..."

A merciful curtain should probably be drawn over the jet-lagged and warranty-voiding events of the next few hours. We will gloss over the ghastly spectacle of PowerBook innards on the kitchen table. We will mention in passing that should you decide to engage in such activities, it is most important to get TORX tools size 8 and 10 if you don't want to render the little screws unusable. We will give thanks to a benign universe for the fact that the only casualty of this scary do-it-yourself project was the port door of Barlow's 170, which, by general admission, was living on borrowed time anyhow. We will strongly suggest that kids not try this at home.

But we will also note that since the days when Steve Jobs was insisting that 128K was perfectly adequate, Mac hackers have been deviating from the orthodox and warranty-preserving path. (True, when the warranty on a Mac was 90 days, this was arguably less terrifying.) Following in this time-honored tradition are a handful of envelope-pushing PowerBook wizards, some of whom were conveniently located at MacAdam on Folsom Street in San Francisco, not far from the aforementioned kitchen table. And if you want to move files from a dead PowerBook's hard drive to a live PowerBook's hard drive, and you're only in town for a couple of hours, you'd do well to put your hardware in the hands of MacAdam's techs. And so we did. (In subsequent weeks MacAdam proved a life-saver on other people's PowerBook emergencies even more dire than this one, so we recommend these folks pretty enthusiastically.)

If you're in some town other than San Francisco, check with your local Mac user group. Mac user groups know where the local wizards are.

We left MacAdam with the modem and data of the 170 duly transferred to the 100. The 170 was consigned to Airborne. Barlow was consigned to Kansas City.

Seven days later, just in time to catch its owner heading for Spain, Barlow's 170 arrived safe and well on the doorstep. It subsequently had many adventures dealing with European telecomm protocols, a story which will be told in due course.

EPILOGUE

As we said, we hope your PowerBook serves you well and faithfully and you never have to deal with any of this. But if disaster strikes, you are far from stranded.

Apple is doing an exemplary job of supporting its PowerBook customers, and the hotline/Airborne approach is all most of us will ever need. Especially since voiding the warranty on an expensive piece of equipment is not something most of us want to do.

If you have extraordinary requirements, the Mac wizard community is rising to the challenge nicely.

PowerBooks have a way of creating a pretty visceral bond with their owners. Most of us are pretty fond of our desktop Macs anyway, but PowerBook dependency is far more formidable—the relationship is somewhere between right arm and family pet.

Lots of us have gotten to the point where installing cards and hard drives in a Mac II is no big deal. Even the Portable was pretty straightforward in this regard—you opened the case, plugged in the card, closed the case, and you were done. The PowerBook, on the other hand, is not for the inexpert or faint-hearted when it comes to this sort of thing. There are plenty of great third-party enhancements for the machines coming out, and any of them that go inside the machine (which is to say, practically all of them) require installation by an Apple-certified tech in order to preserve the PB's warranty.

Given that PBs become indispensable as fast as they do, Apple or one of its duly blessed licensees would be performing a real public service by offering classes in basic do-it-yourself PowerBook diagnostics and repair. Having watched a few at this point, I could probably do a modem installation if I had to, but I'd rather know what I was doing.

In a classic instance of turnpike effect, the PowerBooks are not just satisfying the pent-up demand for a go-everywhere Mac, they're spawning a whole new category of products and services for people who can't live without those go-everywhere Macs. There are some intriguing opportunities here, and it will be interesting to see what springs up in response. ■

One user reported that his PowerBook had also died. That a call to a mysterious toll-free hotline had brought an Airborne truck to his door. That Airborne had whisked the deceased PB away, to return it two days later in perfect working order. Free of charge.

RESOURCES:

Apple PowerBook Hotline
1-800-767-2775

MacAdam
(415)863-6222

The WELL
(415)332-4335 (voice)
(415)332-6106 (data)

Monthly Specials!!

MICRO-L ISA 486-50 CACHE (Symphony) $2895

- Intel 80486-50MHz Processor
- AMI BIOS, Symphony™ Chipset, Dallas DS1287 real-time clock (w/10-year warranty) • 256k Cache SRAM exp. to 1MB
- 8MB RAM 60ns expandable to 32MB onboard
- 1.2MB & 1.44MB Floppy Disk Drives (TEAC)
- 210MB, 15ms, 64k Cache IDE HDD • IDE HD/FD Controller
- Diamond Stealth1280 Card, 1MB VRAM,16-bit VGA card, Hi Sierra color (up to 25 times faster than standard VGA)
- 14" Super Multiscan,1024x768,non-int.,0.28dp,(Relisys-1422)
- 1 Parallel / 2 Serial Ports • Keytronics 101 Keyboard (USA)
- Mid Tower case (Heavy duty), 230W UL P/S & digital display
- MS-DOS 5.0 • MS-Windows 3.0 and MS compatible mouse
- **OPTION: Sony CPD 1304S/1604 monitor - add $265/675**
- **OPTION: Nanao 9080i /T560i monitor - add $735/1595**
- **OPTION: Full Tower - 10-bays, 275W P/S - add $75**

MICRO-L ISA 486-33 CACHE (Symphony) $2035

- Intel 80486-33MHz Processor - Upgradable to 50MHz; Socket for removable crystal allows for CPU changes
- AMI BIOS, Symphony™ Chipset, Dallas DS1287 real-time clock(10yr warranty) • 256k Cache SRAM expandable to 1MB
- 4MB RAM 70ns exp. to 32MB onboard
- 1.2MB and 1.44MB Floppy Disk Drives (TEAC)
- 130MB, 15ms, 64k Cache IDE HDD • IDE HD/FD Controller
- SpeedStarPlus, 1MB,16-bit VGA card, Hi Sierra color
- 14" Super Multiscan,1024x768,non-int.,0.28dp,(Relisys-1422)
- 1 Parallel / 2 Serial ports • Keytronics 101 Keyboard (USA)
- Mid Tower case (Heavy duty), 230W UL P/S & digital display
- MS-DOS 5.0 • MS-Windows 3.0 and MS compatible mouse
- **OPTION: 210MB IDE HDD - add $260**
- **OPTION: Sony CPD-1304 monitor add - $265**
- **OPTION: Diamond Stealth1280 Hi Color card -$140**

MICRO-L 386-33 CACHE (Symphony) $1595

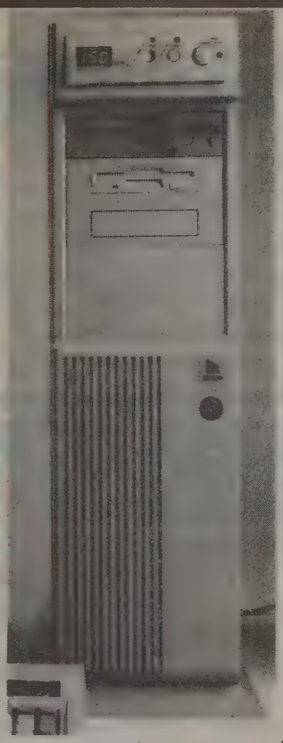
- Intel 80386-33MHz CPU - Upgradable to 40MHz; Socket for removable crystal allows for CPU changes
- AMI BIOS, Symphony™ Chipset, Dallas DS1287 real-time clock (w/10 year warranty)
- 64k Cache SRAM exp. to 1MB onboard (Option: 256k - Cache - add $65) • 4MB RAM 70ns exp. to 32MB onboard
- 130MB, 15ms IDE Hard Disk Drive • HDD/FDD controller
- 1.2 & 1.44MB FDDs(TEAC) • 1Parallel / 2Serial / Game ports
- 14" Super Multi-scan, non-int., 1024 x 768, 0.28dp (Relisys RE-1422) • 16-bit VGA Card with 1MB onboard
- Deluxe Baby Case with 200W UL power supply ,6-bays
- Keytronics 101 Keybd (USA) • MS-DOS 5.0
- MS-Windows 3.0 and MS compatible mouse
- **OPTION: 386-40 SVGA system - add $45**
- **OPTION: Mid-Tower - add $60**

MICRO-L 386-25 (Symphony) $1395

- Intel 80386-25MHz Processor - Upgrades to 33MHz/40MHz; Socket for removable crystal allows for CPU changes
- AMI BIOS, Symphony™ Chipset, Dallas DS1287 real-time clock(10yr warranty) • 4MB RAM 70ns exp. to 32MB onboard
- 80MB, 17ms IDE Hard Disk Drive • HDD/FDD controller
- 1.2 & 1.44MB FDDs(TEAC) • 1Parallel/ 2Serial / 1Game ports
- 16-bit VGA Card with 1MB onboard (Trident)
- 14" Super VGA, 1024 x 768, 0.28dp (Relisys-1420)
- Deluxe Baby Case with 200W UL power supply ,8-bays
- Keytronics 101 Keybd (USA) • MS-DOS 5.0
- MS-Windows 3.0 and MS compatible mouse
- **OPTION: 386-33 SVGA system - add $35**
- **OPTION: 386-40 SVGA system - add $65**
- **OPTION: Mid-Tower - add $60**

MICRO-L 386-SX/20 SVGA $1195

- Intel 80386-SX/20MHz Processor • AMI BIOS
- 2MB RAM expandable to 8MB onboard
- 1.2 & 1.44MB FDDs(TEAC) • 1Parallel/ 2Serial / 1Game ports
- 40MB IDE Hard Disk Drive • HDD/FDD controller
- 16-bit VGA card with 512K onboard (Flicker Free)
- 14" SVGA Monitor, 1024 x 768, 0.28dp (Relisys RE-1420)
- Keytronics 101 Keyboard (USA) • MS-DOS 5.0
- MS Window 3.0 and MS compatible mouse
- Deluxe Baby Case with 200W UL power supply ,6-bays
- **OPTION: 386SX-25 64K Cache, SVGA system - add $75**
- **OPTION: 80MB IDE HDD - add $110**



We offer superior products, and the best values in the industry at *unbeatable prices!*

Intelligent Choices

intel inside

* The Intel Inside Logo is a trademark of Intel Corporation.

You May Recognize Some of Our Customers...

Intel Corporation	U.C. Berkeley	U.S. Naval Department	S.W. Bell
M.I.T.	Procter & Gamble	U.S. Marine Corps	DuPont Exxon
PG & E	Digital Equipment Corp.	U.S. Army	Washington Post
AT & T	Clemsen University	U.S. Veterans Hospital Admin. Ctr.	
N.A.S.A.	Xerox Eastman Kodak	Lawrence Livermore Laboratories	
Lockheed Missile Space Engineering		...and the list goes on and on...	

Standard System Features:

("Unless specified differently in Specials)

- Motherboard - Intel CPU
- 4MB 70ns RAM on-board
- Math co-processor socket
- 1.2MB and 1.44MB FDs(Teac)
- Dual IDE HDD/FDD controller
- 2 serial/1 parallel/1 game ports
- 101Keytronics keyboard
- Desktop case w 200W UL / PS

OPTIONS:.....Mid-Tower add-$60
..... Full-Tower add-$100

MICRO-L™ SYSTEMS: (Prices below do not include HDD, monitor / card)

***486-33 EISAII** w/256k cache (Micronics MB)* $1,795
***486-50 ISA** w/256k cache (MCI/Symphony)* $1,395
***486-33 ISA** w/256k cache (MCI/Symphony) upgradable to 50MHz* $1,055
***486SX/20** w/64k cache (Symphony) upgradable to 33MHz/50MHz* $825
***386-33** w/64k cache (Symphony) upgradable to 40MHz* $755
***386-25** (Symphony) upgradable to 33MHz/40MHz* $695
386-SX20 or 386-SX16 ..... $625,595
***MICRO-L Notebook 386-SX-V20** Vanda , 2MB RAM, 40MB HDD, 1.44 FDD, 1P & 2S ports, 32 Grey scale VGA, 6.2lbs* $1465

MOTHERBOARDS

486-50 EISAII 256K cache/Micronics ... $1795
486-33 EISAII 256K cache/Micronics ... $1295

MICRO-L™ Symphony Spec:
- Symphony Chipset - CPU socket accepts 486-33/50 & 486SX-20
- AMI BIOS & Weitek 4167 math-coprocessor
- Up to 32MB SIMM RAM on-board
- Removable crystal allows for CPU changes
- UP to 1MB direct map cache
- Dallas DS1287 real-time clock (10yr warranty)
- Seven 16-bit and One 8-bit expansion slots
- Baby size board: 8.5in. x 13in.)

486-50 ISA 256K cache, Symphony $935
486-33 AT 256K cache, Symphony $645
486-SX/20 64K cache, Symphony $395
386-33/40 64K cache, Symphony.... $295/315
386-25/33 Symphony $215/240
386-SX25 64k cache $225
386-SX16 /20 ..... $160/175

MONITORS

Hitachi CM-2085, VGA, 20" $1625
IDEK VGA 5217(17")/5221(21") $985/2395
Nanao 16" VGA 1024x768 9080i $1030
Nanao 20" VGA 1024x768 T560i $1865
Nanao 20" VGA 1280x1024 9400i $2065
NEC 3FGX/4FG/5FG $650/735/1435
Relisys S Multiscan,1024x768 RE-1420 .... $295
Relisys S Multiscan,NI,1024x768 RE-1422 $345
Sony 16" SMultiscan, CPD 1604S $995
ViewSonic V6/V7 VGA $375/1195
ATI UltraGraphic VGA 1MB $615
Diamond Stealth 1280, 1MB VRAM $290
Orchid ProD Ils 1MB., w/Hi Sierra $178
Orchid Fahrenheit 1280, 1MB $280
SpeedStar+ VGA 1MB, w/Hi Sierra $178
Vermont Dynamaster VGA 1MB $345

HARD DRIVES

Maxtor MXT-7080A 81MB IDE $295
Maxtor MXT-7120A/S 130MB $365
Maxtor LXT-213A 213MB IDE $595
Maxtor LXT-340A 340MB IDE $915
Maxtor XT-8380SH 380MB SCSI $1075
Maxtor XT-8760SH 768MB $1345
Maxtor 1.02 GB/1.47GB SCSI $1895/2295
Conner CP-3204 200MB $590
Quantum ProDr120AT 120MB,15ms $375
Quantum ProDr240A/S 210MB,14ms $615
Adaptec 1542B - Kit SCSI Cntrlr FD/HD ..$260

MISCELLANEOUS

3-COM 3C503 Etherlink $185
Colorado DJ-10/DJ-20 Tape BK $230/285
American Smart UPS 600LS/400LS .$415/335
Summa Sketch II+ 12"x12" Digitizer $325
Kurta IS1212-ADB 12" x 12" tablet $345
US Robotics Sport 9600 int./ext. $345/375
US Robotics 9600 Courier HST ext. $555
FAX modem 9600 send/recv/software $95

HOURS: Mon thru Fri - 8:30am to 6:00pm (PST)
Sat - 10:00am to 4:00pm (PST)

- We offer competitive prices, superior products, customer support, and the best values in the mail order industry. In addition, we offer:
- 30-day money-back guarantee for defective items.
- One-year Warranty (Labor & Parts)
- Prices reflect 3% cash discount.
- Shipping non-refundable on returned items. RMA # is required
- California residents add 8.25% sales tax.
- Allow 10 working days for checks to clear.
- 15% re-stocking fee on non-defective returns.
- Government, University & Hospital P.O.'s- Net 30 add 3%
- Opened software is not returnable.
- We welcome international accounts, minimum order $250
- APO's, FPO's, & Overseas orders welcome.
- Prices subject to change without notice.
- All trademarks or logos belong to their respective companies
- We are not responsible for typographical errors.

Government, Corporate & University P.O.'s Welcome!
Dealer Inquiries Welcome. On-Site Service Available.

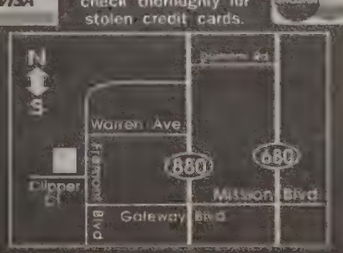
MICROLINE COMPUTERS INCORPORATED

46757 Fremont Blvd., Fremont, CA 94538

(510)770-1900

Fax:(510)770-1912

VISA — For your protection, we check thoroughly for stolen credit cards.



5 LOCATIONS TO SERVE YOU

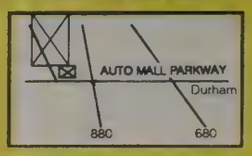
USM
US MACH

Incorporated 1983

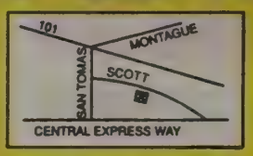
VISA MasterCard

Price and availability subject to change.
No surcharge for credit cards.

USM SAN FRANCISCO
1101 Grandview Drive
So. San Francisco, CA 94080
415-952-5885
FAX: 415-266-9134



USM FREMONT
43104 Christy Street
Fremont, CA 94538
510-623-9040
FAX: 510-623-7592

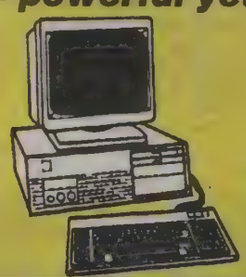


USM SANTA CLARA
3070 Scott Blvd.
Santa Clara, CA 95054
408-980-0602
FAX: 408-980-0604

In
SOUTHERN CALIFORNIA
Visit our stores:
USM BREA
(714) 255-0113
(213) 691-7887
and
USM IRVINE
(714) 252-8335

SYSTEM CONFIGURATION BY COMPONENTS
GUARANTEED LOWEST PRICE * PLEASE FAX OR CALL YOUR CONFIGURATION

PRESENTING...THE US MACH EMERALD SERIES
— powerful yet affordable...and complete!



- 4 Meg, 70ns RAM
- 120 Meg Hard Disk
- 2 Floppies—1.2MB & 1.44MB
- SVGA Monitor 1024x768 .28 dp
- TRIDENT SVGA Card w/1MB
- 101 Enhanced Keyboard
- 2 Serial, 1 Parallel, 1 Game port
- FREE Serial Mouse
- Enhanced Case, Minitower/Desktop Upgrades Available

USM Emerald 386-33/64k cache	$1390
USM Emerald 386-40/64k cache	1390
USM Emerald 486-33/64k cache	1650
USM Emerald 486-33/256k cache	1690
USM Emerald 486-50/256k cache	1990

BASE SYSTEM
1MB RAM, 1.2 OR 1.44MB Floppy,
IDE 2HD/2FD Controller, 2 S./1 P./1 G. Ports,
101 Keyboard, Minitower Case w/200w PS,
Clock Calendar, Math-co Socket

FREE Mouse w/purchase of complete system & on-site service contract

COMPLETE SYSTEM
BASE SYSTEM PLUS:
16 BIT VGA CARD,
VGA PAPERWHITE/SVGA COLOR MONITOR
HARD DISK OPTIONAL*

Motherboard W/CPU	Base System		VGA 640X480 Paperwhite	SVGA Color 1024X768 .39
$120	$290	386SX-16	$460	$590
$130	$300	386SX-20	$470	$600
$140	$310	386SX-25	$480	$610
$220	$390	386-25	$560	$690
$240	$410	386-33	$580	$710
$270	$440	386-33 64K Cache	$610	$740
$270	$440	386-40 64K Cache	$610	$740
$330	$500	486SX-20C	$670	$800
$520	$690	486-33C	$860	$990
$550	$720	486-33 64K Cache	$890	$1020
$590	$760	486-33 256K Cache	$930	$1060
$890	$1060	486-50 256K Cache	$1230	$1360

COLOR SVGA MONITOR

VGA Paperwhite	$125
SVGA 1024x768 .39	235
SVGA 1024x768 .28	285

1024x768 .39 dp **$235**

FAX-MODEM 96/24 **$79**
Made in USA • 5 Yr. Manufacturer Warranty
Fax Modem 96/24 w/Windowfax Software **$99**

HARD DISK OPTIONS*

40MB	CALL	120MB/130MB	CALL
52MB/60MB	CALL	170MB	CALL
80MB	CALL	210MB	CALL
105MB	CALL	240MB	CALL

16" Non-Interlaced Monitor **$695**

US MACH DIAMOND SERIES

32,768 Hi Color SVGA System

FREE MS Windows 3.0 and Serial Mousew/Diamond Series System Purchase

- 4MB, 70ns RAM
- CONNER 120MB/200MB Hard Disk
- PIXEL FX-72Hz Hi Color SVGA 1MB
- SVGA Monitor 1024x768 .28dp
- NORTHGATE Omnikey Keyboard
- 2 Floppies - Teac 1.2MB & 1.44MB
- DIAMOND Series Minitower/Desktop Case
- 2 Serial, 1 Parallel, 1 Game Port

USM US MACH

On-site Service Contract Available

	120MB	200MB
US MACH 386-33/40 64k Cache	$1590	$1790
US MACH 486-20C	$1650	$1850
US MACH 486-33/64k Cache	$1850	$2050
US MACH 486-33/256k Cache	$1890	$2090
US MACH 486-50/256k Cache	$2250	$2450

TOP NAME BRANDS FROM MICRONICS AMI

FACTORY AUTHORIZED DISTRIBUTOR

ORCHID MYLEX QUICKPATH PERCOM FOXTRON CONNER MAXTOR WD SEAGATE QUANTUM NORTHGATE

AMI High Performance Motherboards

486-50 MHz NOW AVAILABLE

AMI 386SX-16	$250
AMI MkV 386-33 64k Cache	CALL
AMI Voyager 486SX-20	$pecial
AMI Baby Voyager 486-33	CALL
AMI Super Voyager 486-50	CALL
AMI Enterprise II 486-33 EISA	CALL
AMI SCSI Cache EISA Controller	CALL
AMI EZ-Flex 486	CALL

MICRONICS

	ØK	4MB
386SX-25	$240	$400
386-33/40/64K Cache	CALL	CALL
486-33/50 ISA/EISA	CALL	CALL

QUICKPATH Made in USA, Motherboards

486 CPU UPGRADABLE

486 w/o CPU $390

486-33 w/CPU . $790

Quantum – Prima Computer, Inc.

Made in USA, Motherboards 486-50MHZ **$995**

International Computers Made in USA, Motherboards

486-50MHz	CALL
486-33/50 EISA	CALL

THE ULTIMATE 386SX NOTEBOOK

The New US MACH Notebook
The Ultimate Notebook Machine

- 386SX 16/20MHz CPU
- 40/60MB Conner Internal Drive
- 1.44MB 3.5" Floppy Disk Drive
- Backlit VGA display with High Contrast LCD & 16 Gray Levels
- 2MB RAM Expandable to 6MB
- 6.3 lbs. w/battery
- NiCad battery & charger included

NB386SX-20/2MB/60MB HD **$1695**

NB386SX-16/2MB/40MB HD **$1495**

CYCLONE XG™ Windows Accelerator Winner $275 ART

ORCHID New! Super Board 486-50MHz

Local Bus—Fahrenheit 1280D

Pro II - 1MB	$BEST
Pro IIS/Sierra	$BEST
Fahrenheit 1280	$BEST
386-40/128kC MB	$BEST

$CALL

32,768 VGA Colors FX-72Hz

Pixel FX-72Hz Hicolor VGA - 1MB **$145**

Pixel S3 Windows Accelerator w/1MB VRAM $245

NORTHGATE OMNIKEY

101 KB OEM	$25
Keytronics 101	45
Focus 2001	55
101NI	$69
102	69
ULTRA	99
ULTRA T	109

Continued from page 98

casts that covered Michelangelo were often full of incorrect or misleading information. If you went by their reports alone, it would have been easy for you to assume that you weren't infected when you were, or that you might have been infected when you couldn't be (at least one TV station showed a picture of a Macintosh throughout a news story about the Michelangelo virus).

Because there are dozens of ways for different viruses to get to your system, you should only assume you are virus-free immediately after running a virus-checking program.

The computer press did a much better job of covering the virus than the mainstream press did, of course. Many of the errors reported in the mainstream press were due to misunderstanding basic computer concepts, but some were due to trusting "experts" who, in fact, knew very little about the virus. However, some of the computer press made the situation worse by giving inaccurate methods for detecting the virus and preventing damage.

Many news sources said a reliable way to detect the virus was to look at the amount of memory reported by the MS-DOS CHKDSK command; if it was 2000 bytes less that it "should have" been, you were infected. However, some infected computers reported the full amount available. The only sure way to detect the virus was to run a scanning program (there were no reports of errors in any of the scanning programs that knew about the Michelangelo virus).

Even worse, many newspapers and television reports said that you could safely avoid the virus by setting the clock on your computer ahead to the date after the virus was to strike. This advice turned out to be true most, but not all, of the time, due to the way that some computers use the MS-DOS DATE command. On some systems, advancing the date with the DATE command did not keep the date advanced after the computer was turned off, thereby giving the user a false sense of confidence and causing some people to lose their data. It would have been much more responsible to tell people to use virus removal software instead.

Because the popular press has by and large ignored the personal computer, it wasn't prepared to deal with the issues that arose with the Michelangelo virus. From the reports, it was clear that many didn't understand how it was spread, what the damage meant, or, most importantly, how easy it was to detect and remove. Most newspapers emphasized the free Michelangelo-specific cures without any regard for the hundreds of other viruses, as if they weren't important because they weren't an immediate threat. Rarely did the issue of preventative maintenance or backup appear. Even in the computer press, the strong message of "check for Michelangelo" completely overshadowed the discussion of better computing practices. ■

KRAY License 524110 C-10

KRAY'S been installing cable since 33BC*

Telephone Systems
Sales and Service
- Panasonic
- Comdial
- Vodavi
- TIE
- MPC/Voice Mail
- Intertel
- Aiphone
- Intercoms

Consulting Services
Engineering
- Premise Distribution
- T-1 lines
- Backbones
- FDDI
- Broad Band
- Panels & Racks

Data Communications Services
- Fiber-optics installations
- Cable installations
- Ethernet (thick & thin)
- 10-Base-T
- Arcnet-Coax & UTP
- IBM, all systems

AC Power
- Full Electrical Service & Testing
- Dedicated Circuits & Power Conditioning
- UPS (Uninterruptable Power Supply) Sales
- UPS Repairs & Battery Replacements
- Panel Furniture Relocations

* Before Computers

11161 San Pablo Ave., El Cerrito, CA 94530
510-236-5500

UNBELIEVABLE - BUT TRUE PRICES
BECAUSE WE BUY DIRECT! 800-456-3837

MYLEX VGA SYSTEMS
486-33 ISA $2699
PRICE INCLUDES: MYLEX ISA 486-33 SUPER VGA System WITH 4MB RAM, 64K CACHE, 200 MB IDE Hard Drive SUPERB Quality, Heavy Duty, Dual Fan MID-TOWER Case, 230 Watts PS. SONY 1304 HG 14" Non-Interlaced Monitor, ORCHID PRO II Video Card, 1.2 MB TEAC FDD, 2S/1P/1G Ports, Focus 101 Enh. KB. 1 Year Warranty, Full Documentation, Fully Tested and Configured. Custom Configuration available With your Choice of Monitor, Video Card, Hard Drive, Large Tower Case Etc., Please FAX OR Call for our very competitive Price Quote.

486-33 EISA $3276
PRICE INCLUDES: MYLEX 486-33 EISA SUPER VGA System WITH 4mb RAM, 128K Cache, 200 MB IDE Hard Drive, SUPERB Quality, Heavy Duty, Dual Fan MID-TOWER Case, 230 Watts PS. SONY 1304 HG 14" Non-Interlaced Monitor, ORCHID PRO II Video Card, 1.2 MB TEAC FDD, 2S/1P/1G Ports, Focus 101 Enh. KB. 1 Year Warranty, Full Documentation, Fully Tested and Configured. Custom Configuration available With your Choice of Monitor, Video Card, Hard Drive, Large Tower Case Etc., Please FAX OR Call for our very competitive Price Quote.

ORCHID 386-40
SUPER VGA $1999
PRICE INCLUDES: 386-40 MHZ., With 4MB RAM, 128K CACHE, SUPERB QUALITY MINI TOWER CASE, 1.2 TEAC FDD, 80 MB IDE Hard Drive, SONY 1304 HG 14" Non-Interlaced .25dp Monitor, ORCHID PRO II Video Card, 2S/1P/1G Ports, FOCUS 101 KB. 1 Year Warranty, Full Documentation, Fully Tested and Configured. Custom Configuration available With your Choice of Monitor, Video Card, Hard Drive, Large Tower Case Etc., Please FAX OR Call for our very competitive Price Quote.

ORCHID 486-33
SUPERBOARD
+ Faherheit 1280 D
THE FASTEST COMBINATION FOR WINDOWS & CAD
$1199
PRICE INCLUDES: ORCHID SUPERBOARD 486-33 MOTHERBOARD WITH CPU , 0K RAM, 0K Cache, and ORCHID FAHRENHEIT 1280D The Super FAST VGA CARD 1280x1024. RAM, Cache additional charge. CUSTOM CONFIGURATION AVAILABLE WITH YOUR CHOICE OF MONITOR, VIDEO CARD, HARD DRIVE, LARGE TOWER CASE Etc., PLEASE FAX OR CALL FOR OUR VERY COMPETITIVE PRICE QUOTE.

SONY BUNDLE
SONY 1304 HG With SpeedStar Plus $687
SONY 1604S 17"
.25 dp, Non-Int. $ 999

ATI VIDEO CARDS
WONDER XL 512 $167
GRAPHICS VANTAGE 1 MB $347
GRAPHICS ULTRA 1 MB $467

FUJITSU 5 YR. WARR.
2263 ESDI/SCSI 778MB $1199
2266 1.2 GIGABYTE $1777
MYLEX DCE 376 SCSI $ 569
ADAPTEC 15428 KIT $ 267
PLEASE CALL FOR OUR PRICE LIST

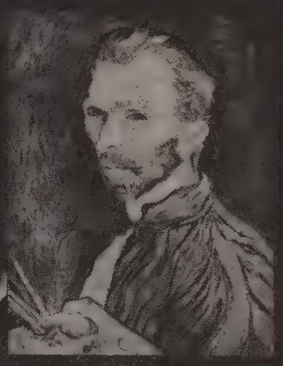
ARGO Computers, Inc.
220 S. Rock Blvd., RENO Nevada 89502
ORDERS : 800-456-3837
INFORMATION: 702 - 324 - 7070
FAX: 702 - 324 - 7575

Innovative! Quality Images! Hi-Performance!

If Van Gogh Were Alive Today, He'd Be Using The World's Fastest Hand-Held Scanner

From

Prolab®



Omron engine plus 32k cache interface card (patented) Four times faster than most competitors which ensures productivity

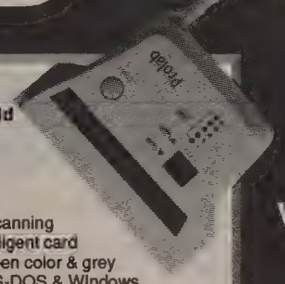
Microprocessor designed to protect the engine's life and reliability

Real-time display plus multiple file formats for fast and easy operation

PS-4000G - 256 Grey-Scale
Hand-held scanner

- 400dpi real-time
- Auto-stitching
- Works with both DOS and Windows
- 32K cache intelligent card
- No DMA cahnnel required
- 3 scan modes, overspeed scan indicated
- Wider scan width w/auto-scan capabilty
- 11 OCR languages w/auto-learning built-in
- Images - rotation, resizing & multiple merges

PS-4200C
Color Hand-Held scanner



- Real-time display when scanning
- 32K cache intelligent card
- Converts between color & grey
- Software for MS-DOS & WIndows
- Gamma correction provided
- No DMA channel, no EMS memory required
- Images - 90° rotation, resizing, multiple file merge, color reduction
- 10 Foreign language capabiltiy

FREE!
DOS Software

FREE!
Windows Software

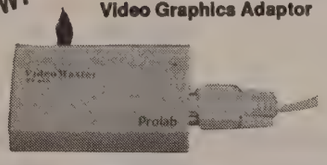
FREE!
Language OCR
Normally Lists for $799!!

TurboGraphic
Accelerator card for Windows

- Windows 3.1 driver
- 100% VGA compatible
- Hi-performance - up to 1280 x 1024 resolution, up to 32,768 simultaneous colors
- Softrware drivers included
- Hardware cursor capability

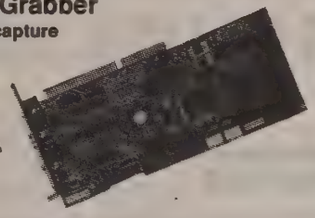
NEW!

NEW!
VideoMaster™
Video Graphics Adaptor



- External box, pocket size, travel box "To-Go"
- Supports PAL/NTSC standards
- Flicker-free capabilty
- Up to 640 x 480 resolution
- Monitor and TV display simultaneously

ImageGrabber
Screen capture Card



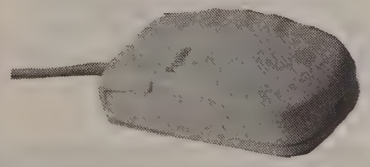
NEW!

- Converts multiple video signals to VGA signal
- Overlay of video & VGA data
- Display of live video & still frame capture capability
- Software works under MS-DOS and WIndows

INnerUPS™
Intelligent Unninterruptible Power Supply Card

- 200W system dependent, will back up 5-25 times per day
- Protects data against power failures w/zero switching time
- For all IBM PC XT, AT, 386,486 or 100% compatible systems

More Mouse™ PM7000T



- Three button mouse and trackball input device
- 240dpi - 50~2400dpi dynamic resolution
- 650mm/sec tracking speed
- Serial interface with 1200bps baud rate
- Long cable for Notebook or Presentation

For a Dealer in Your Area, Please call:

Fremont
ATR 510-683-0776
Computer Plus . 510-490-8118
C.G.S 510-657-3510
Fresno
Perfect 209-472-7159
Modesto
Aroma 209-525-8080
Mountain View
The Computer Store 415-968-3466
Milpitas
A.C.P 408-946-9746
Beta 90 408-875-6682
Oakland
Mercury 510-763-7631
Palo Alto
PC Warehouse. 415-321-9288
Richmond
Evergreen 510-526-8668
San Bruno
PC Warehouse. 415-225-9026
Santa Clara
Chicotech 408-986-8998
San Fransisco
The Computer Store 415-387-7272
..... 415-421-1801
TopTek 415-564-3500
San Jose
Crystal Computers 480-446-1522
I.C.S 408-241-9787
W.I.T 408-433-0188
So. San Fransisco
Beta 90 415-875-6822
Sefco 415-873-7792
Sunnyvale
Aroma 408-736-4355
Technoland 408-524-9188
PC Warehouse 408-985-1309

ZYNK INDUSTRIAL CORPORATION

41650 Christy St., Fremont, CA 94538

FOR RESELLERS ONLY

Quantity Discounts Available

Call or Fax Us at:

TEL: 510-490-6611

FAX: 510-490-6722

Tech Support: 408-727-5544

Continued from page 112

visibility, font, font style and font size, ability to respond to a mouse, ability to be dragged around the screen—all the features of a graphic user interface. You can add code for any control by double-clicking on it during form design: a window opens and you can create a subroutine that will act when the control is clicked on, moved, enabled or disabled, and so on.

In Visual Basic, Microsoft has combined the virtues of QuickBASIC with an extraordinarily easy-to-use interface designer for Windows. That is the good news. The bad news is that even BASIC cannot make Windows easy.

Microsoft Windows is a lot like a stage show, and form design is similar to set building. In this Steve Gibson is right: Visual Basic has set a new standard for Windows stagecraft.

This leads us to the bad news. Even with BASIC's simple syntax and the elegance of Visual Basic's form design, there is no easy way to build a Windows program.

An example: I designed a program in which two text-boxes chose at random one of two phrases to display. A third text-box reported whether they had chosen the same phrase. An "Again" button on the form triggered one cycle of this choose-and-compare behavior, and another button ended the program. You wouldn't think this would take all day to build; but it did because it took that long to decide who should control what.

Among the "who"s were the two buttons, the three text-boxes, and the background window in which all these things coexisted. The random-choice-of-phrase function was needed by two of the text-boxes. Should I give it to each of the text-boxes, or should I save space by making one global function available to any of the controls on the form? If so, where should I put it? In the program's global code, or in code for the window-form that held all the text-boxes? Should I have the "Again" button put text directly into the text-boxes (the simpler option), or should it trigger procedures in each of the text-boxes (giving better "encapsulation" and separating messages from the details of response)?

In object-oriented languages, objects are entities that have both data and procedures, and which can be copied and modified by a process a lot like evolution. The additional complexity of designing objects pays off when you reuse the design over and over again in descendants. Visual Basic is almost object-oriented. All of the entities on the screen act like objects in an object-oriented language. The difference is that objects cannot be used as prototypes to make descendants, and you cannot design new objects. All the Visual Basic objects are mules.

Don't let me discourage you. Visual Basic is a clever compromise between the demands of Windows and the demands of simplicity. Simplicity did not fare as well as one might wish, but the fault lies in Windows rather than in the language. It is certainly easier to use than any of the mainline languages like C++ and Smalltalk. It also supports runtime communication with other Windows applications with Dynamic Data Exchange (DDE), and can be extended with Dynamic Link Libraries (DLL). It has an icon library that is simply lovely. You can make executable files with it. And third-party developers have already written for it. If you have Windows, somebody in the office should know Visual Basic. ($199 list) ■

CREATIVE TOOLS

Continued from page 196

film stock, as it does its other product line of emulsions, but it no longer processes it. You can still get Kodachrome processed—the Olympic Games, *Sports Illustrated*, and *National Geographic* still depend upon it. But photographers in general complain at how hard it has become to get service now, and are turning to other stocks.

Once you leave Kodachrome, high-resolution digital imagery can look pretty satisfactory. Can digital imagery match Kodachrome prints and transparencies? Can the music on CD compact disks match vinyls? Yes, a Kodachrome print from a custom lab on special paper may outshine the same image from a hi-res digital source, just as a mint virgin vinyl platter, played on a high-end tube system where the phono cartridge costs more than your whole hi-fi, can yield a richer sound than a CD. But for most workaday applications, digital imagery is gaining wider acceptance.

BIG YELLOW ON THE MOVE

Acceptance by Kodak means that the digital train is really leaving the station.

Eastman Kodak reached a point where it realized that despite its years of expansion and success, it could meet the same fate as the railroads, who concentrated on rails instead of transportation. Kodak deduced that it should concentrate on imaging rather than on silver halide-coated acetate. Kodak hired some of the best technologists and marketing research in the world before putting one big multibillion foot an inch forward.

WHY SHOULD YOU CARE?

Why should you care about these global marketing stories?

The Philips CD-I and the Commodore CDTV optical-based systems are both well developed, thoughtful solutions for full motion interactive multimedia, but there is no assurance that either of these incompatible competitors will still be around two or three years from now. Kodak's commitment to digital, coupled with its enormous network of installed retail channels, ensures consistent continuity of Photo CD as a development medium. They have really done their homework up in Rochester, and the Photo CD offers up a richly layered ecosystem of multimedia solutions, although there's no full-motion video. Yet.

The multimedia applications are extremely intriguing. As we speak, developers are working on prototypes of authoring strategies where you can use HyperCard or MacroMind Director to build interactive documents. Content developers will publish Photo CD titles that enable you to use your personal computer, or the remote control of a Photo CD player, to control a wide variety of audiovisual choices. For the home, interactive talking-photo albums and family trees can be configured.

Mail order catalogs, travel agency and real estate previews, sponsored news and sports handouts, and other commercial and business applications can be effective. The electronic coffee table book—a parallel to the still-image computer-aided videodisk system—may be the most popular. The National Geographic Society, the Sierra Club or the Metropolitan Museum can publish Photo CD "books," which allow the home viewer to look at, say, photos of Birds of the American West, then go to supportive text, and hear the sounds of their calls; or study Renaissance painting and hear music of the period and listen to commentary. If you have a computer with a CD-ROM drive or a videodisk player, you can enjoy these activities now. The Photo CD can reach an even wider audience. ■

RESOURCES

Eastman Kodak Company
343 State St.
Rochester, NY 14650-0519
1-800-242-2424

Apple Computer, Inc.
2025 Mariani Ave.
Cupertino, CA 95014
(408)996-1010

Adobe Systems Inc.
1585 Charleston Rd.
P.O. Box 7900
Mountain View, CA 94039-7900
(415)961-4400

Aldus Corp.
411 First Ave. South
Seattle, WA 98104-2871
(206)233-7416

Image-In Inc.
406 E. 79th St.
Minneapolis, MN 55420
(612)888-3645

Logitech Inc.
6505 Kaiser Dr.
Fremont, CA 94555
1-800-552-8885

Media Cybernetics Inc.
8484 Georgia Ave.
Silver Spring, MD 20910
(301)495-3305

DIVIDE & CONQUER

DOWNSIZING RIGHT

CORPORATE COMPUTING
CORPORATE COMPUTING

INTERNATIONAL CONFERENCE & EXPOSITION

April 27-May 1, 1992 ■ Los Angeles, California

DIVIDE

Downsizing/Rightsizing means migrating selected mainframe and minicomputer-based business applications to platforms of network-based microcomputers and workstations that operate within a client/server architecture.

CONQUER

Downsizing/Rightsizing means tremendous cost savings, system flexibility, user-friendly interfaces, stronger bonds between business managers and IS organizations, and enhanced productivity–adding up to a *competitive advantage.* The Downsizing/Rightsizing Conference is the industry's most comprehensive educational event.

Conference tracks:

■ Client/Server Architectures ■ Managerial, Financial, and Organizational Issues ■ Networking and Downsizing Technologies ■ Corporate User Studies ■ GUI (Windows) Applications ■ Systems Development

The Downsizing/Rightsizing Exposition will feature the latest tools and technologies you will need to implement Downsizing/Rightsizing in your organization. Some of the companies you can expect to see include: *Andersen Consulting, AT&T, Compaq, Computer Associates International, Cooperative Solutions, Data Based Advisor, D. P. Specialists Development, Encore Computers, IBM, KnowledgeWare, Lotus, Marathon Systems, Novell, Optimal Computing, Prologic, Santa Cruz Operation, Sun Microsystems, WYSE Tehnologies,* and more.

EXPO PASS

FREE ADMISSION/EXHIBITS ONLY

DOWNSIZING/RIGHTSIZING

Corporate Computing Exposition

Register for FREE Exhibit Hall Pass

Simply complete this form and a badge will be reserved in your name at the Downsizing/Rightsizing Exposition, April 28–29, 1992, Los Angeles Hilton & Towers, Los Angeles, California.

Name _____

Title _____

Company _____

Address _____

City _____ **State** _____ **Zip** _____

Country _____

Gift Registration Code *(from mailing label)* _____

FREE admission to the Exhibit Hall, Select Keynotes, and Product Education Workshops.

EXHIBIT HOURS:
Tuesday, April 28-12:15–6 p.m.
Wednesday, April 29-9:45 a.m.–4 p.m.

RESERVE YOUR FREE PASS:

1-800-733-3593, ext. 255

or fax your inquiry to: 508/649-6926
508/649-2162

EXPO PASS

For information on exhibiting, call
1-800-733-3593, ext. 294 or ext. 261

Sponsored by

Boston University Corporate Education Center
72 Tyng Road
Tyngsboro, MA 01879

Cosponsored by

CIO · COMPAQ · DBMS · NETWORK WORLD · PC MAGAZINE · COMPUTER ASSOCIATES Software superior by design · ENCORE · Boston Systems Group, Inc. · sun microsystems · IBM

Continued from page 124

dimensional space, and effectively conveys information about geological phenomena. **Patran 3**, a CAE tool, models and analyzes stress, heat, flow, and vibration, and provides compatibility with many engineering analysis software packages.

DOCUMENTATION

The documentation is fairly comprehensive. SGI does not ship the entire set of UNIX documentation with the Indigo, but provides information on Showcase, software installation, utilities, and an owner's guide. While it provides tutorial information, like much of UNIX documentation, it's useful mainly if you know what to look for. The Indigo also supports UNIX man pages and displays them at rapid speed.

STANDARDS

The Indigo is designed so that its applications are ACE-compatible; ports conform to hardware standards such as SCSI-II, NTSC, PAL, and AES3, including printers, disk drives, CD-ROM drives, DAT drives, and a variety of external audio and video equipment. Software standards include UNIX, SVR3, POSIX 1003.1, X11/R4, X/Opent, Motift 1.1, Display PostScript, and MIDI.

NETWORKING

The Indigo supports Ethernet as a standard. Optional software provides connectivity to IBM, Apple, and DEC networks. Networking protocols include TCP/IP (standard); Network File System (NFS) for file sharing and NetVisualizer for graphical network administration are available.

DIAGNOSTICS

The Indigo has a visual display for testing peripherals, such as the mouse, keyboard, monitor, microphone, and audio components. To test a component such as the mouse, you click on the mouse icon. A display of that component is shown on the screen. For the mouse, you move the on-screen mouse with the actual mouse; to test the buttons, you click a button and that button is highlighted on-screen. The confidence tests also tell you if the hardware that you selected is not installed.

THE SHAPE OF THINGS TO COME

SGI's recently announced new machines, the Indigo ELAN and the Crimson, add even more modularity to an impressive family of graphic workstations. While the Indigo provides a rich feature-set, SGI's new machines show there is a demand for even more.

Some of the Indigo's capabilities will only be fully realized through products not yet on the market. However, through its ease of use, high performance, and graphic capabilities, the Indigo packs a lot of punch for its size and cost. ■

IBM OS/2 2.0
$129
• TRUE 32-BIT MULTI-TASKING.
• RUNS ALL YOUR DOS, WINDOWS PROGRAMS CONCURRENTLY.
• STABLE ENVIRONMENT.
• 25 UTILITIES INCLUDED.
STANFORD SALES
(408) 996-7579
DEALER AND QUANTITY DISCOUNTS AVAILABLE

CREATIVE TOOLS

Continued from page 215

requires the solution of two problems. First, you must get the picture physically from one computer to another; second, you must be able to understand the picture's format once it's on your computer. ASDG's Art Department Professional (ADPro) provides the solution to the second problem by being able to process a wide array of non-Amiga picture formats. However, Amiga users have so far been frustrated by the lack of an effective solution to the problem of physical data transfer between Amiga and non-Amiga computers.

Existing methods of physical transfer include using serial port communication (the slow speed of which makes it unreasonable for transferring large images) and the interchange of removable media such as floppy disks. This second method is especially attractive, since the Amiga can read and write diskettes from other computers, most notably the IBM PC, using programs such as CROSS-DOS from Consultron.

Prior to ASDG's development of the SPLT form, images exchanged via floppy disk were limited to the capacity of a single floppy. This was because there were no split/join tools common both to the Amiga and other computers. The SPLT form is a method for splitting large files into manageable chunks, keeping track of the chunks, and putting them back together in their proper order.

It should be noted that the SPLT form and tools are general-purpose in that they will process any type of data, not just images. ■

RESOURCES:

The Exploratorium
3601 Lyon St.
San Francisco, CA
94123
(415)561-0360

ASDG
925 Stewart St.
Madison, WI 53713
(608)273-6585

Fred Haney & Sons Computers

37416 Joseph Street, Fremont, Ca. 94536

TEL : 510-792-3505
FAX : 510-792-5678
BBS : 510-792-5119

Member of the BETTER BUSINESS BUREAU

Call our Bulletin Board for the latest at the lowest prices

Complete Systems

286-16	**System**	**$398.00**
386-16sx	**System**	**$465.00**
386-25sx	**System**	**$492.00**
386-33dx	**System**	**$618.00**
386-40dx	**System**	**$637.00**
486-33dx	**System**	**$952.00**

All Systems Includes:

- **Mini-Tower case with Power Supply**
- **Mother Board with 1 meg of Ram**
- **5.25" - 1.2m Floppy Drive**
- **3.50" - 1.44m Floppy Drive**
- **1 parallel & 2 Serial Ports**
- **Super VGA Display Card**
- **101 Enhanced Keyboard**

Enclosures with Power Supply

101	Small AT Case w/200 watt Power Supply	$65.00
102	Mini Tower w/200 watt Power Supply	$65.00
105	Medium Tower w/250 watt Power Supply	$90.00
107	Tall Tower w/250 watt Power Supply	$130.00

Mother Boards *with* CPU

111	286-20 w/CPU VLSI Chipset	$90.00
113	386-16sx C&T Chpset	$138.00
117	386-25sx C&T Chipset	$165.00
119	386-33dx OPTI Chipset (with 64K cache)	$290.00
123	486-33dx VLSI Chipset (with 64K cache)	$625.00
180	SIMM memory modules (1meg x 9 - 80ns)	$40.00

Tape Backup Systems

127	Colorado DJ-10B 120 meg capacity	$235.00
129	Colorado DJ-20B 250 meg capacity	$295.00
130	Jumbo Tape Controller Card #FC10	$90.00

Operating Systems

050A	Microsoft Windows 3.0 (with Manual)	$46.00
050	Microsoft DOS 5.0 (Full version / Manual)	$45.00
054	DR DOS 6.0 (OEM Version)	$20.00

Monitor Display Cards

145	Monographics with printer port	$14.00
147	OAK VGA card with 256K memory	$35.00
148	OAK VGA card with 512K memory	$52.00
151A	OAK VGA card with 1 Meg memory	$72.00
153A	Orchid Prodesign II with 1 Meg Memory	$150.00
153B	Orchid Fahrenheit 1280 (1 Meg) - Hot!	$295.00

Communication

179	2400 Baud Modem - Quality !!	$40.00
183	9600B Fax (Snd + Rec) / 2400B Modem	$79.00
179A	9600 Baud Modem (V.32 + V.42)	$305.00

Disk Controllers, I/O, Mouse and Keyboards

169	IDE Controller (2 Hard Disks, 2 Floppys)	$15.00
171	IDE + Multi-I/O (2HD, 2FD, 2S, 1P, 1G)	$25.00
187	BTC Mouse (MS & Mouse sys compatible)	$16.00
189	101 BTC Keyboard	$29.00
191	101 Maxiswitch Keyboard	$39.00
177	Multi I/O (2 serial / 1 parallel / 1 game)	$15.00

Monitors (with Tilt and Swivel Base)

135	Monochrome (Flat Screen) 14 Inch	$95.00
137	VGA 0.31"dp (640 x 480) - mono/white	$120.00
139	VGA 0.39"dp (640 x 480) - color	$245.00
142	Super VGA 0.39"dp (1024 x 768) - color	$255.00
143	Super VGA 0.28"dp (1024 x 768) - color	$280.00
143A	Super VGA 0.28"dp * Non-Interlaced *	$350.00
MX	NEC Multisyncs / Nanaos / Sonys	Call.....

Hard Disks (with Full 1 year Warranty)

155	40 meg IDE	*Call for our latest Prices*
157	80 meg IDE	
161	125 meg IDE	
163	210 meg IDE	
165	SCSI Hard Disks - Call for available models.	

Printers

222	Star NX-1001 9 pins 80 Columns	$149.00
333	Star NX-2420 24 pins 80 Columns	$255.00
444	Star NX-2420R 24 pins - (Color !)	$315.00
555	Star NX-2415 24 pins 132 Columns	$375.00
666	Star NX-LS04 Laser - (HP Compatible)	$795.00
777	Star SJ-48 Portable Ink Jet Printer	$315.00

Floppy Drives

131	1.2 meg (5.5") Drive	$58.00
133	1.44 meg (3.5") Drive (with Mounting Kit)	$55.00

Surge Protectors

193	Surge Protector (6 outlets) UL approved	$7.00
195	Power Control Center + surge protection	$16.00

Call us for all your Computer Needs.

Ask for *Freddy or Vinnie .....*

- NOVELL netwoks available
- Authorized CONNER repair / drop off center
- Fax / Call / BBS for latest Price List
- Corporate and OEM Customers Welcomed
- 100% Financing Available
- VISA / MASTERCARD Accepted
- 15 days 100% Refund on Complete Systems sales (Ask for complete Details)

Call the Quality Leader

ON DEMO NOW! OS/2 ver. 2.0, 32-bit operating system

FREE 2-Hour Software Installation on all systems.
FREE labor on upgrades on all of our systems for 5 years.

5 Year Labor & 1 Year Parts Warranty. We Use The Finest Made in USA Motherboards

486-33MHz w/256K Cache

120MB Hard Drive — Super VGA System
DOS 5.0 & Windows 3.0 included

- Intel 486 CPU, Made in USA Motherboard
- 4 MB (expandable to 64 MB) 8MB add $180
- 120 MB Conner or Maxtor Hard Drive – 200MB add $200
- Orchid Pro IIs w/1 MB & Sierra
- Viewsonic 6 non-interlaced Super VGA Monitor (1024x 768 w/.28 Dot Pitch)
- Teac 1.44 MB 3.5" Floppy Drive
- Teac 1.2 MB 5.25" Floppy Drive
- 2 Serial, 1 Parallel, 1 Game port, I/O Card
- Maxiswitch 101-Key Enhanced Keyboard
- Full Tower Case w/250 Watt Power Supply
- Microsoft Compat. Mouse w/Pad
- Window 3.0 with manual
- DOS 5.0 with manual
- 2 Year Warranty on Motherboard

$2195

Unsurpassed Graphics Speed

For Windows 3.0 and CADD Systems
Orchid Ultra High Speed Superboard 486/ Fahrenheit 1280/D 32-Bit Graphics Combo

THE FIRST TRUE 32 BIT DIRECT BUS GRAPHICS CARD GIVES YOU BURNING SPEED!

PC Labs Windows Benchmark Screen Copy (Millions of Pixels/Second):

Orchid Pro IIS w/1 MB	Orchid 1280 (Normal AT Bus)	Orchid 1280/D (32 Bit Direct Bus)
0.80	4.34	13.46

System Includes:

- Orchid Superboard 486-33/256K Motherboard w/32 Bit Video Slot
- Made in USA Six Layer Motherboard
- 8 MB Ram (Expandable to 32 MB Onboard)
- 200 MB Conner or Maxtor 14ms IDE Hard Drive
- Orchid Fahrenheit 1280/D GUI Accelerator S-VGA Card w/1 MB VRAM & Sierra 32,768 Colors HC RAMDAC (Up to 1280x1024 Resolution)
- Viewsonic 7 or Sony 17" Trinitron CPD 1604S Multiscan HG Monitor (1024x768 w/Super Fine .25mm Dot Pitch)
- Teac 1.2 MB 5.25" Floppy Drive
- Teac 1.44 MB 3.5" Floppy Drive
- 2 Serial, 1 Parallel, 1 Game port I/O Card
- Northgate Omni 101-Key Enhanced Keyboard
- Full Tower Case w/250 Watt Power Supply
- Logitech Bus 3-Button Mouse w/Pad
- Windows 3.0 w/Manuals
- Dos 5.0 w/Manuals

Summa Graphics add $275

486-50 MHz Add $300

$3695

486-25MHz w/64K Cache

120MB Hard Drive — Super VGA System
DOS 5.0 & Windows 3.0 included

- Intel 486 CPU, Made in USA Motherboard
- 4 MB (expandable to 32 MB) 8MB add $180
- 120 MB Conner or Maxtor IDE Hard Drive – 200MB add $200
- Orchid Pro IIs w/1 MB & Sierra
- Viewsonic 6 non-interlaced Super VGA Monitor (1024x768 w/.28 Dot Pitch)
- Teac 1.44 MB 3.5" Floppy Drive
- Teac 1.2 MB 5.25" Floppy Drive
- 2 Serial, 1 Parallel, 1 Game port, I/O Card
- Maxiswitch 101-Key Enhanced Keyboard
- Microsoft Compat. Mouse w/Pad
- Full Tower Case w/250W Power Supply
- DOS 5.0 with manual
- Window 3.0 with manual
- Motherboards have 5 year parts & labor warranty
- 2 Year Warranty on Motherboard

$2150

386-33MHz w/64K Cache

120MB Hard Drive — Super VGA System
DOS 5.0 included

- Intel CPU
- Made in USA Motherboard
- 4MB (expandable to 64MB)
- 120 MB Conner or Maxtor IDE HD
- Diamond Speed Star Super VGA Card w/512K
- Samsung Syncmaster 3 or Viewsonic 4E Super VGA Monitor (1024x768 w/.28 Dot Pitch)
- Teac 1.44 MB 3.5" FDD
- Teac 1.2 MB 5.25" FDD
- 2 Serial, 1 Parallel, 1 Game port, I/O Card
- Maxiswitch 101-Key Enhanced Keyboard
- Desk Top or Tower Case w/Power Supply
- 3-Button Microsoft Compat. Mouse w/Pad
- DOS 5.0 with manual
- 2 Year Warranty on Motherboard

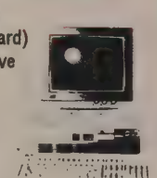
Micronics Motherboard....add $200

$1625

386SX-25 w/32K Cache

44MB Hard Drive — Super VGA System

- Intel CPU, Micronics Motherboard
- 1 MB (expandable to 16 MB Onboard)
- 40 MB Connor 28ms IDE Hard Drive
- Diamond Speed Start Super VGA Card w/512K
- Viewsonic 4E Super VGA Monitor (1024x768 w/.28 Dot Pitch)
- Teac 1.44 MB 3.5" Floppy Drive
- Teac 1.2 MB 5.25" Floppy Drive
- 2 Serial, 1 Parallel, 1 Game port, I/O Card
- Maxiswitch 101-Key Enhanced Keyboard
- Desk Top or Tower Case w/ Power Supply



$1275

386-40MHz w/64K Cache

120MB Hard Drive — Super VGA System
DOS 5.0 included

- Intel CPU, Made in USA Motherboard
- 4MB (expandable to 64MB)
- 120 MB Conner or Maxtor IDE HD
- Diamond Speed Star Super VGA Card w/512K
- Samsung Syncmaster 3 or Viewsonic 4E Super VGA Monitor (1024x768 w/.28 Dot Pitch)
- Teac 1.44 MB 3.5" FDD
- Teac 1.2 MB 5.25" FDD
- 2 Serial, 1 Parallel, 1 Game port, I/O Card
- Maxiswitch 101-Key Enhanced Keyboard
- Desk Top or Tower Case w/Power Supply
- 3-Button Microsoft Compat. Mouse w/Pad
- DOS 5.0 with manual

Micronics Motherboard...add $200

$1675

MICRONICS COMPUTERS INC.

System Upgrades and Add-on Options

Call for pricing on complete Micronics systems.

Hard Drives

120 MB Conner	$385
125 MB Maxtor	385
200 MB Conner	615
200 MB Maxtor	615
120 MB Colorado Tape Backup	225
250 MB Colorado Tape Backup	275

Monitors

Sony 1304	Non-Interlaced 1024x768 14" .25dp	$595
Viewsonic 5+	Non-Interlaced 1024x768 14" .25dp	585
Viewsonic 6	Non-Interlaced 1024x768 .28dp	395
Samsung Syncmaster 3	1024x768 14" .28dp	339
Sony 1604S	17" 1024x768	1095
Viewsonic 7	17" 1280x1024	1150
Viewsonic 8	20" 1280x1024	1845
NEC 4FG	Non-interlaced 1024x768 15"	795
NEC 5FG	Non-interlaced 1280x1024 17"	1425

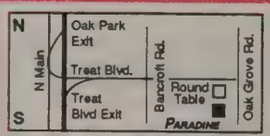
VGA Cards

ORCHID

Diamond Speed Star SVGA Card w/512K	$135
Diamond Speed Star SVGA w/1 MB	175
Orchid Pro IIs with 1MB	$209

Printers

Citizen 200GX, 9 pin	$175
Citizen GSX 130, 24 pin	259
Citizen GSX 140 Plus 24pin	315
Citizen GSX 145 Wide Carriage	415



Note South Bound 680 Customers: Exit Oak Park left on N Main, left onto Treat Blvd 3 Miles from 680

No Surcharge

VISA MasterCard

Leasing/Financing Available.

PARADINE COMPUTER SYSTEMS

Oak Grove Plaza Annex • 2958 Treat Blvd., Suite A • Concord, CA 94518

Hours:
Mon-Fri 9:30-7:00
Sat 10:00-5:00

Call the Quality Leader
(510) 825-6068
Fax: (510) 825-5940

Prices subject to change without notice. Not responsible for typographical errors.

CLASSIFIEDS

ACCESSORIES

POWERVISION
New revolutionary on-line buying & information service. Ground floor opportunity MLM. Income for Life. A no risk money making Opportunity. Call for details. (415) 388-8893

Howtek scanner, Matrix slide maker, PC graphics software, 19" monitor, DiaQuest Animation control, color encoder 415-330-5447.

VISA/MC MERCHANT ACCOUNT. Get Visa/MC Electronic Terminal and accept credit cards from customers. We specialize in Mail Order*Telephone Sales*Retail*In-Home* New Business*Bank Turndowns. NO CREDIT REQUIREMENTS! Easy qualify-Fast set up. CFS Box 36250, San Jose, CA 95158. 408-997-5000 Fax 408-268-5057.

BULLETIN BOARDS

GARLIQUE GRAPHICS
WORLD FAMOUS GIF'S
ADULT CD'S
FREE CATALOGS
SUBSCRIBE ON-LINE
MasterCard VISA AMEX
408-847-0665

BULLETIN BOARDS

PACIFIC EXCHANGE MULTILINE 408-946-8561. 12 lines, 3.5 Gigs, over 40,000 Files, USA-Today News, Stock Report, Games, Chat, Classifieds and more. On-line since 1986.

First Online BBS. We have more than 25,000 programs for your IBM or Compatible! Shareware Magazine's PC-SIG CD ROM Software Library online. Now 4200 Meg and 7 lines. 12/24/9600 HST/V.32/V.42 San Francisco (415) 992-3780 San Jose (408) 247-1717 Redwood City (415) 598-0398 Orinda (510)254-5455.

WINDOWS ONLINE IDS (510)736-8343 bbs. Get those hard to fine public domain Win3 files and support. Call from you home or office, by modem. Assist your company with their Networking of Windows ATTN: Developers, upload your new DEMOS and Sharware for distribution. We provide * 30 New Win3 & DOS files a day * 2,500+ Win3 files * Over 120+ message and support Conferences * daily NEWS about Win3 and other events * Staff writers on; Windows Tips, Shareware Reviews, New Win3 Product Releases, WinTraining & Programming * Win3 Programmers and Developers Meeting place and Conferences * USR-DS modems on Members lines CompuComs on other lines. * 10 lines - 2.0 gigabytes * Visa and MasterCard * Sysop: Frank Mahaney * Software PCBoard 14.5a.

BULLETIN BOARDS

Amateur Action BBS 100% Adult GIF Files and Exclusive videos available. BBS like no other. (408) 263-3393 8N1 12/2400/9600 V.32 US Robotics Dual.

CARTRIDGE REFILL

Tri-Star Laser Services. Remanufacturing of most Toner Cartridges. Repair services for laser Printers and PC Copiers (408) 942-1625.

New compatible refill toners, low prices for all models. Printer ribbons re-inked, or new ones. Also other items. C.A.P. (408) 452-0241.

CARTRIDGE REFILL

Linda's Laser Remanufacturing Toner Cartridge Service. We also Buy used Cartridges. For more info call (408)377-8583.

TONER CARTRIDGES
Sharper and darker Images for Only $29
Laser Printer Specialist
1(800)346-7740
IMAGE DATA PRODUCTS
$2.00 off with this ad !

U.S. Cartridge Service
NOT A GOVERNMENT AGENCY
TONER CARTRIDGES. REMANUFACTURED
for laser printers and PC Copiers
2 DAY DELIVERY AVAILABLE
92 RANDOLPH AVE. SO. SAN FRANCISCO, CA 94080
$29.95
20% MORE TONER
100% GUARANTEED
24hr TURNAROUND
WE BUY EMPTIES!!!
(415) 589-4345

Toner Cartridges
LaserJet & LaserWriter
$27.50 100% Guaranteed
PRECISION LASER
VISA
(408) 727 - 8338

CARTRIDGE REFILL

Laser Ace. Toner Cartridge recharge for Laser Printers and Canon PC Copiers. (408) 263-4608.

DON'T BUY NEW. Recharge and $ave! $39.95. Free local p/u. 100% Guaranteed. Call LASERCARE (408)249-3067.

SAVE 50% OR MORE. Complete toner cartridge rebuilding. We support over 400 printers Including EP7000. Call 1-800-484-1055.

COMPUTER INSURANCE

SAFEWARE
INSURES YOUR COMPUTERS!
Full replacement of hardware, media, purchased software. From $49 yearly. Covers fire, theft, power surges, other accidents. Blanket coverage; no list of equipment needed. Low $50 deductible. Call for information or immediate coverage.
1-800-848-3469
Local (614) 262-0559
SAFEWARE: The Insurance Agency Inc.
2929 N. High Street, PO Box 02211
Columbus, OH 43202

COMPUTER FASHION

Beige is Boring!
Color the Exterior of your Computer and Printer
(510)934-6358
for a color brochure

COMPUTER FASHION

WANT TO GET SOMETHING ON YOUR CHEST?
Computer Aided T-Shirts
C.A.T.S.
Artwork, Family Photos, & Computer Designs Transferred to T-shirts.
.CDR, .EPS, .BMP, .TIF, .PCX, Mac Pict & MORE
100% Cotton Beefy-T's and Sweatshirts start at $15!
Call C.A.T.S. at (415) 665-2215

DISK CONVERSION

COMPUTER DISK & TAPE CONVERSIONS
Macintosh & MSDOS & Mainframes
Duplications & Backup Retrieval
DATA CONVERSION SERVICES
415-456-7000

MicroTimes
Classifieds Work
Call Dana at
(510) 934-3700
For Details

HOW TO PLACE YOUR CLASSIFIED AD IN MICROTIMES:

MINI DISPLAYS: 1 column inch=1 5/16"x7/8" wide. $49 per col/inch, camera ready art, or $49 + $20 for 1X typesetting/production fee.

BUSINESS ADS: Rates are $15 for 15 words or less. 50¢ for each additional word. Your phone number counts as one word.

CATEGORIES: See index to choose the classification that best describes your product or service.

FREE ADS: Private individuals may have one free classified ad of 15 words or less under Hardware, Software, or Accessories only. Mail coupon by the noon deadline for that issue, no phone orders for free ads.

No refunds will be given after copy is received. Credit may be given under certain circumstances

Mail, deliver or fax this coupon along with payment by noon deadline for that issue.

TO RESERVE SPACE
Phone Orders
(510) 934-3700
Fax Orders **(510) 934-7351**
with Visa or MasterCard only.

CLASSIFIEDS CATEGORIES
- ❑ HARDWARE
  - ❑ For Sale
  - ❑ Wanted
- ❑ SOFTWARE
  - ❑ For Sale
  - ❑ Wanted
- ❑ ACCESSORIES
- ❑ BULLETIN BOARDS
- ❑ SERVICES
- ❑ BAR CODES
- ❑ CARTRIDGE REFILL
- ❑ DESKTOP PUBLISHING
- ❑ DISK CONVERSION
- ❑ REPAIRS
- ❑ VOICE MAIL
- ❑ MISCELLANEOUS
  - ❑ Computer Rentals
  - ❑ Office Rentals

CAREER MARKETPLACE CATEGORIES
- ❑ Employment Information
- ❑ Jobs Offered

CONSULTANTS NETWORK CATEGORIES
- ❑ Accounting
- ❑ Business Opportunities
- ❑ Engineering
- ❑ Finance
- ❑ General
- ❑ Hardware
- ❑ LAN
- ❑ Programmers
- ❑ Software
- ❑ Technical Writing
- ❑ Training

_____
_____
_____
_____
_____
_____

Cost of ad _____ **X number of issues to run** _____ **= Amt. enclosed** _____
❑ **Classified** ❑ **Career Marketplace** ❑ **Consultants Network** **Discount: 6xs=25% 12xs=50%**

❑ Check/MO ❑ Visa ❑ MasterCard Credit Card # _____ Exp. Date _____

Name _____ Amt. _____

Address _____

City _____ State _____ Zip _____

Phone (____) _____

SEND TO: MicroTimes Classifieds, 3470 Buskirk Ave., Pleasant Hill, CA 94523

DEADLINE FOR INSERTION IN THE MAY 11, 1992 ISSUE IS NOON ON MONDAY, APRIL 27, 1992

CLASSIFIEDS

DIRECT MAIL | DIRECT MAIL | HARDWARE | HARDWARE | HARDWARE | HARDWARE

Direct Mail Data Processing

Cheshire Labels • PostNET Bar Codes • Carrier Routes
Bulk Mail • Non-Profits • Zip+4 • CASS Certified
Laser Ltrs • Press Releases • Envelopes • List Broker

We Read All Mag Tape & Disk Formats

415-897-7411

DESKTOP PUBLISHING | HARDWARE

Small World Productions. Desktop Publishing & Graphic Design; Editorial & Proofreading. Training & Consulting. Quality service at reasonable rates. (415)285-4643.

STATE-OF-THE-ART DESKTOP PUBLISHING. Technical Publications & Manuals; Business Proposals & Reports; Marketing Literature; Newsletters & Brochures; 3-D Graphic Design & Illustration. Pagemaker, Coreldraw, Designer, AutoCAD, Satisfaction Guaranteed; Reasonable Rates! (510)537-6016 or (415)345-8928.

HARDWARE

Guaranteed Computer Chips, Millions in stocked shipped within 24 hours. Accept Visa, Mastercard, COD. Fletchers 1-800-874-6707. Fax 602-545-7033.

IT'S FIXED OR IT'S FREE! Repairs on IBM/PC/XT/AT. Compact & Clones. Plus Scanning & Instructions on MS DOS & Windows. Fast Service, 90 Day Warranty, Low Price, Quantity Discount. Selling: 9600 Baud modem Internal $189 Xternal $219. THE SOLUTIONS (415) 571-5693 Lee or (408) 297-8413 Brian.

Apple 2GS w/5 drive Transwarp, IBM, Transporter, Sound Card, 40 mg HD, 4 meg RAM, Colorprinter, over 300 pieces of software $1000 Lee (415) 571-5693.

Plotter-Calcomp 960 with Talos 36x48 Digitizer Tablet. Both for $1995. Phone Wade at (510)651-9700.

Local Network Setup 3 Workstations + Televideo 386-16, PC-MOS (415)587-7851.

DEMO SALE-NAME BRAND EQUIPMENT! Intel math co-pro. 20, 25, + 33MHz-$90, AST premium 386/25-2MB/320MB HD $2750. AST premium 386/25- 2MB $1600, AST 386SX Laptop 2/60 $1950; Compaq 386/20e M60 $2395; Epson LQ 570 $195, IBM portable 70-061/70-121 $1795/1995, IBM PS/2 desktop 70-061/70-121 $2295/2395; 1MB memory adapter for all HP laserjets (upgradeable to 4MB's) $85, HP legal tray/envelope tray $49/59, Postscript font cartridge $229, Tax font $115; Everex step 386/25 + 386/33 $ call; 286/12mhz AT computer w/ 1MB $299; NEC CD-ROM package-includes 7 CD-ROMS, speakers + headphones $479; Call GIGABYTES at 510-790-0961 or fax us at 510-790-0951 for more info

Hardware 286 Clone-20MB HD, 1MB RAM, 5.25 HD Floppy, GSVGA 14", 101 keyboard, Mouse $650/bo

Mac Plus 2.5MB, external 800k drive, and Fanny Mac $600/obo (510)531-0511.

IBM 286/12, modem, 60MB harddisk, floppies, EGA monitor, Logitech scanner/OCR, $590, Spencer, (408)270-7553.

Extend memory board w/4m $300. Mix 256k, 1m, 4m SIMMs to 32m. M-F/9-5 415-647-2113 Maureen.

IBM (compt) 386-20, 1.2 FD + hard drive, printer font, Complete, lots of SW, 101 kbd. $500 408-739-8677.

Orchid Pro IIs $150, 386-33I $140. Trident VGA $60. Jim 408-395-6020

NORTHGATE 386-20; 4MG/68MG; 1.2/1.4; 16-bit VGA; color multisynch; trackball; DOS5.0, Win3.0; warr avail; $1530; Ed 510-452-0722 (msg)

CD-ROM drive, Pioneer six-disc changer. $750/bo. Call 510-526-0643.

Orange 386 MS-DOS coprocessor (Nubus Card) for Mac II 1MB RAM, VGA card $1100/bo Ken 415-383-7622.

Atari 1040ST 20meg HD, modem, color monitor, super changer, IBM emulator, software $600. 510-865-7531 (eve).

Modems, (2), 9600b, external, V.32/42bis, MNP, new in boxes, $340 each. Ken 510-689-7098.

HP Laserjet: perfect condition w/procollection font cartridge $295. 415-457-3706 Chris

386-16MHz, 2MB RAM, 65MB HD, 1.2 1.44 floppies, color VGA, mini tower, 2 serial/1 paral/1 game, $1100 obo 415-344-8695.

New Micro Science 80MB harddisk $195. Steve 510-490-2783.

Micropolis-72M & MFM controller (w/d) $275, new IDE controller 2HD/2FD & I/O ports $25. 510-846-6702 (eves).

Apricot, 512k, 2DD, mouse, keyboard, MSDOS/GEM softwares, new $375; Teac 360k drive, $45. 510-828-9643.

286-12 MHz, 2 FD, 2 HD (65MB total), EGA, monitor 1MB RAM, mouse $500/offer. 408-248-4958.

Textronic Scope model 2445 4 channel 150MHz dual deflection $1200 or best offer. After 5pm 510-427-0928.

Apple IIcx color, sta configuration 2400 ext modem. All new in boxes $2700/offer 408-723-8210.

Sun 4/490 $6000. Call Greg at 408-354-0598.

Toshiba 1000SE laptop 1MB RAM. Best offer buys 415-403-5742.

Notebook Brokers
Over 50 models
Best Prices
DMS
(510) 505-9007

GSB & ASSOCIATES
Printer Upgrades
HP II, IIP, III Epson 6000
Panasonic 4420/50i
1 meg $70
2 meg 105
4 meg 190
Call 800-727-2093

TEST-O-PAC INDUSTRIES INC.
Package Test, Design Consultation and Manufacturing, Multi Baby AT Pack, Regular Baby AT, Tower Pack and much more package box and foam.
Ph: 408-436-1117
Fax: 408-436-1255

Memory Source International

MSI WILL BEAT ANY ADVERTISED PRICE • LOWEST PRICES • SAME DAY SHIPPING
2471-B Autumnvale Drive, San Jose CA 95131
TEL: (408) 956-9980 Fax: (408) 956-9992

CPU's

80286-10/12/16/20/25	CALL
80386DX-16/20	CALL
80386-25/33	CALL
80386DX-25/33 AMD	CALL
80386DX-40 AMD	CALL
80486DX-25/33/50	CALL

SIMM MODULES

Add $2 For SIPPS

4Mx9-60ns	$140
4Mx9-70ns	135
4Mx9-80ns	130
1Mx9-60ns	40
1Mx9-70ns	37
1Mx9-80ns	34
1Mx9-10ns	33
4Mx8-80ns	110
256Kx9-10ns	10
256Kx9-80ns	11
256Kx9-70ns, 60ns	12

DRAM 256x4

256Kx4-80ns	$3.99
256Kx4-70ns	4.25
256Kx4-60ns	4.50
256Kx4-100ns	3.90

DRAM 256x1

256x1-150ns	$.99
256x1-120ns	1.05
256x1-100ns	1.10
256x1-80ns	1.30
256x1-70ns	1.35
256x1-60ns	1.40
256x1 Static RAM Col	CALL

DRAM 64x4 ..... CALL
DRAM 64x1 ..... CALL

MATH CO-PROCESSORS

INTEL

8087-5, 8 MHz	$65/75
80287-6, 8, 10, 12 MHz	90
80387SX-16 MHz	120
80387SX-20 MHz	130
80387DX-25/33 MHz	190

CYRIX

80387DX-16, 20, 25 MHz	$159
80387DX-33 MHz	169
80387SX-16 MHz	110
80387SX-20 MHz	120
AMD/WEITEK/ULSI	CALL
WEITEK MATH CO 4167-33	490

IIT

8C87-8 MHz	$55
8C287-10 MHz	70
8C287-12, 20 MHz	80
8C387-20, 25 MHz	134
8C387-33 MHz	138

EPROMS	CALL
1x4- 4x1 STATIC RAM	CALL
LASER PRINTERS MEMORY	CALL
HP PERSONAL SYSTEM MEMORY	CALL
CACHE MEMORY	CALL
IBM PS/2 MEMORY	CALL
APPLE MACINTOSH MEMORY	CALL

HARD DRIVES

CONNER-MAXTOR
WD- QUANTUM, ALL KINDS OF HD & FDD DRIVES ..... CALL
MOTHERBOARDS, MONITORS, VGA & VIDEO CARDS, KEYBOARDS ..... CALL

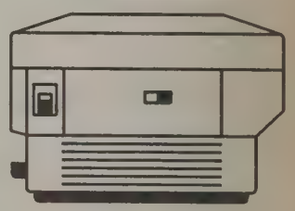
HOURS: MON-FRI 8:30AM-6PM SAT 9AM-3PM PRICES SUBJECT TO CHANGE W/O NOTICE

High Resolution PostScript® Printer

For IBM PC's and Compatibles

4 times greater resolution than 300 dpi at a 300 dpi price !

- ✔ 830 x 415 dpi
- ✔ 50 Fonts
- ✔ 4 M Bytes Memory
- ✔ Supports Adobe Type 1
- ✔ 8 Page Per Minute Canon Printer
- ✔ 4 times faster than Apple LaserWriter®



List Price ... $2795

Blowout Sale ! $1395*

Like New, Factory Refurbished Printer with 1 Year Warranty

Other Models from $1495
Buy Direct & Save !!!
Limited Quantities

Visit our Showroom for a DEMO !

The Laser Printer Service Company

430 Martin Avenue
Santa Clara, CA 95050
(408) 988-0801

* Cash Price.

CLASSIFIEDS

HARDWARE

Apple IIGS with color monitor. On sale $950. Information contact 408-251-6342 after 5pm.

386-16 w/2MB RAM, 20MB HD, 1.2 & 1.4 FD, EGA, 101, DOS 5.0, Windows, Winword, PageMaker, Procom Plus, Norton Util 6.0 Pctools $750. 408-746-0750.

Amiga 2000, 3/80, 2 DD, Genlock, cordless mouse, tilt/swivel color monitor, DTP, video, BIZ, games, joystick, fonts +++ $1535 415-924-1133.

HARDWARE

IBM PCXT, 640k, 20M HD, mono card/monitor, AST 6 pack, Logitec Trackman, Okidata, 93 printer, $450/obo 408-245-6323.

Apple IIE 128k, used 50 hours, Apple drive, printer hookup, tilt monitor, $599 Harry 510-830-4766.

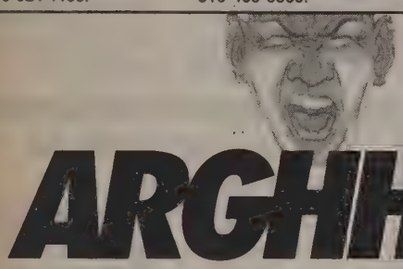
386-16 complete system with 40MB hard drive, loaded, must see $495. 510-452-2434 or 510-465-5360.

HARDWARE

Cordata 8088-8MHz. 100% IBM compatible. 2 drive 512k mem. exp. 8MB mono monitor. Lots of software. $300. Moe 510-226-1560.

Full page monitor, 15" XL Cornerstone, with card and drivers, $650/obo 510-525-7576 or 510-848-4525.

IBM PS/1 accessories (new): Printer $250, 5 1/4" ext. drive $160, adapter card unit $89. Jim 415-345-3116.



ARGHHH!!

PowerStations - Asylum for the overcharged. New, pre-owned, and refurbished computer equipment, parts, and accessories. Micro to mainframe - All major brands.

PS

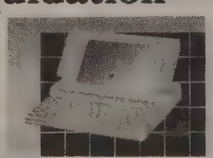
Don't scream, just call for a 24 hour spare part exchange! Send us your non-working part we'll exchange it for a working one within 24 hours of receipt!

PHONE (818)981-4568 FAX (818)981-8033
4632 Natick Ave. Suite #202 Sherman Oaks, CA 91403

Panasonic Office Automation OA

Notebook Liquidation

$1895.
($3499. Retail)
Model CF-370H6



- **386sx 20Mhz 60MB** (19ms) Hard Drive
- 1MB Ram exp. to 5MB
- 1.44MB Floppy - 6.9 lbs. Sturdy Easy-grip case.
- Super-crisp Backlit LCD 640x480 VGA Display.
- Serial, Parallel, External VGA and keyboard ports.
- Innovative power conservation features including sleep and auto-resume.
- Includes DOS, Battery, and Charger.
- Optional internal modem & Math Co-proc.
- 30 day money back guarantee.
- Ask about half-price memory upgrades.

Free U.P.S. delivery in the Bay Area.

Optical WORM Drive

- 5 1/4" Full Height Internal. SCSI Interface. **940MB** Capacity.
- Write Once Read Many Technology. Laser Accuracy.
- Non-eraseable security. Perfect for Image Capture Databases.

(Original Retail $3,495.) Super Closeout Price - Only **$1195.**
940MB cartridge $125. *Includes Interface Kit w/software*

SPECTRON SYSTEMS **Electronics Marketing**
3439 Calico Ave.
San Jose, CA 95124

All items subject to availability. Prices and specifications subject to change without notice. CA residents add 8 1/4% sales tax.

VISA **Call (408) 559-6459** MasterCard
Outside 408 call 1-800-541-0009

HARDWARE

Toshiba laptop T1200 w/case manuals and software $425/obo 415-292-6384.

Laserjet III $1000. Original price $1495. Call Carmen 415-563-8864 evenings.

AT 286, 40MB HD, 1.2 FD, 1MB RAM, clr VGA monitor, loaded $500/obo 408-945-1529.

Turbo XT EGA $350, XT mono $200, Okidata printer $50, Qume printer $50, many cards, 510-689-2942.

Mac 512k, 800k drive, Imagewriter II, modem, software, accessories, extended keyboard, $500/bo, John 408-248-1536.

Toshiba T-1000 laptop, 640k, hard RAM, 2400-Baud modem, case, manual $425. 510-458-6522.

NEC multispeed EL II laptop, function keys on left, numeric key pad, needs batter. $550 510-933-2396.

Micom M3024+ 2400 baud V.22bis external modems, a pair: $50. 415-550-1444.

Wholesale prices! 486-33 w/ CPU $575, 386-25/33 $230/270, 386SX-25 $160, CD ROM Sony CDU535/Mitsumi $380/299, Sony Optical drive/RW S501 $3100, Scanner A4Grey/A4Color $230/460, Tape backup Colorado DJ10/DJ20 $230/280, Toshiba P17CSo1 1280x1024 .25 Dot Pitch $1600, Notebook 386SX-20 40meg HD $1450, Window 3.0 $39. we sell everything for Mac&IBM software, hardware peripherals. 408-997-8380.

Okidata ML 391 plus printer. Brand new-unopened $550/obo. Richard @ 415-986-1491.

CompUSA notebook 386SX20MHz Intel 387SX 60/2. All ports AT BUS w/3 slots warranty, software $2200. 415-756-4155.

NCL 2 1/4" color hand scanner. Includes software selects. Best 256/4096 colors $100 415-961-2741.

Projection pad. Projects monitor to movie screen. IBM and Mac compatible. New $595. 415-664-9064.

Compaq 386/25 color system. Fax modem, mouse, extras. All for $1800 415-593-0655.

Compaq Deskpro XT-Compatible 20MB, 2DD, CGA monitor, 101 keyboard $425/bo. 510-538-8916.

Amiga 2000, 5 meg RAM, 105 HD, 1084S monitor, 2 FDD, Optical Mouse, Software. $2500/bo 408-251-4054.

CD-ROM drive-Pioneer six-pack changer $799/bo 510-526-0643.

Apple IIe, mono, 1FD $275 or on terms 408-453-9322 or 248-8321.

HARDWARE

386DX-16MHz Televideo System 2MB RAM, 40MB HD, 1.2MB floppy, mono monitor, complete system $550 415-244-9254.

Compaq Port 8088/2 FD/printer $300/obo. Port II 286/10M $475. 408-453-9322 or 248-8321.

IBM PC 640/2FD/mono w/ Epson printer $300. 408-453-9322 or 248-8321.

Amiga 500 system: 1MB RAM, NEC Multisync II, games, 2 floppies, joystick. $600. 510-689-0329 John

WANTED: Clipper 5.0, 5.1 for PC; Nat'l Instrument PC MIO Board with Labview/Lab windows 503-598-0490.

Mac SE/30-2meg, ext keyboard, anti-glare screen, modem, lots of software, $2250/bo hurry! 415-469-7856.

Epson LX-800 printer, manuals $100 408-945-9615.

386/33, 4MB, 120MB Quantum, Sony 1304, LQ-560 speedstar VGA, modem, 2 mos old $2500 415-382-1057.

APPLE/MACINTOSH PRODUCTS AT GREAT PRICES! We sell, trade, and buy both new and used Apple and compatible name brand equipment! Systems, video products, peripherals, software and parts. Please call GIGABYTES 510-790-0961 or fax us at 510-790-0915.

HARDWARE WANTED

I buy used computers and parts. Top money paid. Please call Ernesto (415) 668-2318.

Apple IIE, IIC, IIGS wanted DEAD OR ALIVE. Also color monitors & printers. Cash paid free pick up (415)267-4842.

WANTED! Toshiba T1000 laptops in good condition. Will pay top dollar. Call 408-496-6683.

WANTED: XT, ATS complete system, used, running or not! Quantities up to 25, lot prices. 206-459-4910.

Top $$$ paid for new or used ACER notebook computers and hard drives. Call Jim or Keith 408-947-0577.

Bernoulli or Syquest internal drive 44 or 88MB. Brian 415-579-2815.

REPAIRS

PC REPAIR Pick-up & Delivery **(408) 241-6803**

STAR MICRO SERVICES
FASTEST TURNAROUND IN THE BAY
SERVICE CALL SPECIAL '17.99
- INSTALLATION/UPGRADE OF MEMORY
- HARD DRIVE TUNE UP
- TROUBLESHOOTING OF PC COMPATIBLES
- SOFTWARE INSTALLATION
- AND MORE...
- WE OFFER 1 TO 2 DAY TURNAROUND

WE ARE OPEN 7 DAYS A WEEK
3300 EAST CASTRO VALLEY BLVD. SUITE L
CASTRO VALLEY, CA 94552
510-538-4537

The Total Mac: We do it all Reasonable repair for Macintosh Computers and all Laser Printers. On Site Service within S.F. Brainstorm Acc. for Mac Plus $249. (415)386-4320.

ON-SITE PC REPAIR. No travel charge, in San Jose. HATCH CONCEPTS (408) 226-2625.

FUSER ASSEMBLIES REPAIRED-$85. HP Laserjet, Laserjet II, III, and Apple Laserwriter Plus, IINT/NTX printers. Whole printer repairs available. Parts also available Call (510) 656-6173 Lazer Labs-The Laser Printer Experts.

PC REPAIR. Inexpensive Repair of IBM PCs or Compatibles. Upgrades of all types. House Calls and Small Businesses Welcome. Guaranteed Lowest Prices. Please Call Ernesto at (415) 668-2318 or (415) 576-5057 (pager).

MISCELLANEOUS

For classes, sales presentations, six 386 color VGA computers, laser printer, Novell or Windows, display projector, near SF Airport, $350/day, (415)589-9242.

REPAIRS

REPAIRS

C:\Computer & Monitor Sale & Repair
Free Advice & Carry-In Check Up. State Reg. No. E29924
$75+Parts* PC Compatibles & Macintosh Monitors & Printers
1655 Whipple Rd.
Suite 22, Hayward, Ca. 94544
Fax (510) 475-7739
SERVICE CITY **(510) 475-0747**
*Carry-in service rate. tm055

CLASSIFIEDS

SERVICES

Disk Drive Repair

Repair & Sale
Hard Drives & Floppys
Data Recovery

SCSI ESDI ST506 PS/2
Novell XENIX/UNIX MACS

2122 Adams Avenue ▼▲ San Leandro, California 94577 ▼▲ (510) 430-0595

Drive Repair Services
corporation

6151 Golfview Drive ▼▲ Bloomfield Hills, Michigan 48301 ▼▲ (313) 645-6221

Don't Delay, Do It Today!!!

DUPLICATION

IBM OS/2 · MACINTOSH · APPLE
COMMODORE · UNIX
24 Hour Turnaround.
Fastest in the West,
No Minimums!!! Custom Printed
Tyvek Sleeves & Labels
Optical Text Scanning

ID DISK CO. 415-883-4628
NATIONWIDE 1-800-882-6454

DATA FIELD
Disk Drive Repair

Conner Drive repair:		Qty + 10	
40Mb	$95	100 Mb	$175
130Mb	$185	200Mb.....	$225
Seagate Drive repair:		**Qty + 10**	
20Mb	$65	40Mb	$95

90 Day Warranty ¥ 7-10 Day Turn Around
1055 Pecten Court, Milpitas, CA 95035
Tel: (408) 946-6444 Fax: (408) 946-9325

Full Service Organization

- On Site Service
- Loaner Printers Available
- Service Contracts
- Quick Turnaround
- Quality Workmanship
- Warranty on All Service
- 10 Years Experience
- Complete Parts Inventory
- Corporate Rates

We Repair HP, Apple, Canon, Imagen, QMS, and More!
US Laser
408-988-0801

Slides
Overheads 4x5s

Presentation Graphics
Screen Grabs
Bitmap Images

McLain Imaging
voice: (800) 457-4020
bbs: (714) 642-1030

PR That Works. Commstock Communications gets results. Since 1986. Call for free consultation. (510) 676-4733.

Slides
4000 Line 35mm or 4x5 from most IBM and Mac files, including TARGA.
510.451.3686

Your Data On CD-ROM
Images-Audio-Information
Complete Pre-Mastering
• 1 off disk
• Glass master
• Mass production
Custom CD (415) 454-7033

DATA RECOVERY
24 Hour Turnaround
Free Estimate
DATA-ONE INC.
(408) 434-1002
9-5 Mon-Fri

If we don't fix, you don't pay.

REPAIRS
(Mother Board Component Level)
IBM PC/XT/AT, PS/2, COMPAQ
CLONES, and etc.
* 4 days turnaround * Low price
* 90 days warranty * Qty discount

TECHNOLAB (408) 727-4011

LASER PRINTER REPAIR

Most major brands serviced!

Call us for: • Tune-up! • Service Contract!
• Fuser rollers • Paper jams • Power supplies • Fans • Gears •
• Laser • Optics • PC boards • Corona wire • Filter • Sensors •

We provide on-site service at very reasonable rates! Small or big jobs are no problem. Friendly professional staff. We fix Canon copiers, too. Four years of experience.

Canon® Authorized ★★★★★ Service

LaserSharp
800-894-8974
San Jose

HARD DRIVE REPAIRS
CONNERS, MAXTOR
& QUANTUM SPECIALIST
also buy/sell/data retrieval
for CONNER
Call (408) 951-6829
(please leave a message)
Fax (408) 441-8469

MONITOR REPAIR
ALL BRANDS & MODELS

SALE On All Monitor Brands

- All IBMs & compatibles
- All Apples & compatibles
- All NECs models
- All Compaqs & compatibles
- IBM, PC, XT, AT
- All power supplies & keyboards
- All terminal models & all Seiko models
- Free estimate
- Low price
- 24hr. turnaround (option)
- 180 days warranty
- PC repair

ENHANCED COMPUTER SERVICES
3014 Scott Blvd., Santa Clara, CA 95054
Tel: 408•986•8127 Fax: 408•986•8129

SERVICES

DOCUMENTATION • ProDoc provides integrated writing, graphic design and prepress production services to Bay Area Software Firms. Cure all your documentation headaches with one call. marketing materials too! Professional, friendly, experienced; UNIX, DOS, or Mac. Call Jann (510) 654-4082. uunet.uu.net!omsys!jann.

FREE Computer Slides. Trial: Five FREE slides ($40 value). Jim Peck, JP Color Laboratory. (415)965-0803.

SERVICES

MONITOR REPAIR. All brands and models $80 flat rate plus parts, 6 mos guarantee. (510)489-9301.

Venture Capital Sources 408-984-6548.

SOFTWARE

Electronics Tutorial Software. Nine disketts. Over a thousand screens on D.C., A.C., analog and digital principles. Q and A. Format. IBM. $25. (408) 252-3223. 5591 Kimberly St. San Jose, CA 95129

SLIDES

35mm SLIDE SCANNING
Using Nikon Scanner Low cost, many file formats, retouching also available. Slides & negatives. PC's & Mac's both in HI RES. Call for info (408) 423-3520

SOFTWARE

Software Instructional Video Tapes-"MAC ACADEMY" 55 Titles in Stock-For Sale or Rent (415) 255-9760.

SMA QUANTUM
Computer Service
THE ULTIMATE IN DISCOUNTED
Computer Software
CALL NOW FOR A FREE CATALOG

1-800-ULTIMIT
800-858-4648
707-437-4124

Consulting Available
Same Areas

Software A to Z

Custom	WE	Professional
Contract	CAN	Reliable
Consulting	DEVELOP	Affordable

ALL KINDS OF SOFTWARE
for Workstations PCs Macs

Object-Oriented	C++, C
Graphical User Interface	X, Motif
Real-Time Software	Unix

(408) 263-0775

SERVICES

SERVICES

IT'S FIXED OR IT'S FREE!
Repairs on IBM/PC/XT/AT
Compact & Clones
Plus Scanning & Instructions on MS DOS & Windows
• Fast Service • Low Price
• 90 Day Warranty • Quantity Discount

THE SOLUTIONS
415/571-5693 Lee 408/297-8413 Brian
Pager #415/907-1335 page day or night
With this coupon '5 off service Open Sat, Sun & Nights

The Laser Co.

Toner Cartridges 36.99

We support 200 laser printers and Cannon photocopy machines. New chemical process to coat the drum (extends the life of the drum to 7 recyle times). 20% more toner than the original. Free delivery (Bay area only) 100% guarantee or your money back Fast Service..... (patent Pending)

Laser Printer Repair Service Free Brochure Call 408 972-7915

HP series I ,II and III , Apple Laser Writer Plus,IINT,IINTX. Cannon CX and SX engine specialist.
Free loaner, $ 20 diagnostics fee. WE ARE LASER PRINTERS SPECIALIST

CLASSIFIEDS

CONSULTANTS NETWORK

SOFTWARE

SOFTWARE

SOFTWARE

Mac-In-DOS

SOFTWARE BREAKTHROUGH!!!

Allows PC to read/write MAC 1.44 high density diskette. Exchange of text, binary & graphics files between Mac & DOS IS NOW POSSIBLE with this software. No cable or hardware is needed

Also Available...

on SUN, IBM, HP, SCO, Interactive UNIX.

Pacific Micro
(415) 948-6200
To Order Call 1-800-628-DISK

Free Public Domain Software. Thousands of PD Programs in our CD-ROM. Come in and copy your favorite programs, FREE! Bring your own disk...a service provided by SERVICE CITY. 1655 Whipple Rd. Unit #22 Hayward. Call (510)475-0747 for details!

Borland C++ 2.0 professional, includes Turbo assembler and Whitewater Resource Toolkit. $100 (415)647-4704.

TOP QUALITY IBM SHAREWARE 3100+ General, 150+ Adult pgms. G, R, and X rated GIFs $1.50* EACH disk, no minimum number. General or Adult catalog $1.00 each. Age and signature required for adult catalog. *(SHAREWARE PROGRAMS REQUIRE SEPARATE PAYMENT TO AUTHORS IF FOUND USEFUL). Sunshine Software, 6492 South St. Suite #470, Lakewood, CA 90713.

HiJaak-latest ver. (2.1) $75. Not yet registered. Tom 408-985-9709.

Lotus 1-2-3 2.2 $95. DOS 5.0 $40. Microsoft Word for Windows 2.0 $200. Call 510-533-2990.

Protect yourself from computer viruses! Learn how to create living viruses! THE LITTLE BLACK BOOK OF COMPUTER VIRUSES teaches you how. Includes working examples and complete source code. 192 pages. Send $14.95 or request free details. Satisfaction quaranteed. American Eagle Publications, PO Box 41401M, Tucson, AZ 85717.

SBT Integrated Accounting Package for the Macintosh. General ledger, payroll, payables, job costing, time and billing. All original disks and manuals was $1975, a steel at $850. Also Foxbase database package for the Macintosh. Originally $395 a great deal at $190. 707-224-2062.

Novell 3.11-250 user LAN s/w. Half price, will install $4500 707-795-6913.

Perform Pro for Windows 3.0 (shrinkwrapped) $100. Microsoft Mouse & Paintbrush $75. 415-584-6045.

Brand new, shrink wrapped dBase-IV Developer's Edition. Complete package, never opened $700/obo, Call 408-335-5782.

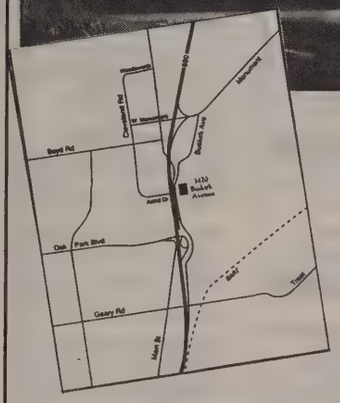
Home Automation software for PCs accesses sensors and controls electrical appliances $100. 510-830-8929.

SOFTWARE WANTED

NEW SOFTWARE PRODUCTS WANTED... To acquire/license... By Small Successful Software Co... fax brief synopsis of software capabilities & target market To: PERFECT NICHE SOFTWARE, INC. Fax: (415)331-4200.

BUSINESS OPPORTUNITIES

In the MicroTimes building... Prime Sublease Opportunity



- Approximately 1,600 Square Feet
- Negotiable Term of One to Three Years
- Excellent Freeway Access
- Ample Free Parking
- Private Entrance
- Security System
- Proximity to BART/Bus Service
- Free use of conference room, restrooms, and patio

3470 Buskirk Avenue, Pleasant Hill

For Additional Information Contact:
Peter O'Brien
The O'Brien Company
(510) 837-9213

ACCOUNTING

CORPORATIONS • AUDITING • PARTNERSHIPS

ESTATES & TRUSTS

David A. Simon, CPA
MBA, Ms in Taxation, Member: Taxation division, AICPA

Tax planning and preparation, accounting systems, IRS audit defense, accounting, comprehensive tax services, financial statements and audits for businesses, professionals, estates and trusts

510-893-5753
Lake Merritt Plaza, Oakland, CA 94612

TAX SERVICES • ACCOUNTING • AUDITING

FINANCE

THE DILLON GROUP
International Commerce & Finance

ARRANGED COMMERCIAL & BUSINESS LOANS

BUSINESS LOANS
COMMERCIAL LOANS
ACCOUNTS RECEIVABLE LOANS
WORKING CAPITAL LOANS
5K-25M
THE DILLON GROUP
408-452-1874
(loans will be arranged, pursuant to a California Department of Corporations, Personal Property Broker License)

CAREER MARKETPLACE

EMPLOYEMENT INFORMATION

Pacific Vision Presents Jobs-on-Line a multiline electronic employment and business opportunity search service for the Hi-Tech community. Jobs-On-Line (415) 324-3780 modem settings 8-N-1

Get a Job - in Silicon Valley!
Use Your PC to Job Hunt!

"The Silicon Valley Profiler"
A personal Hi-Tech Employment DataBase.
●1600+ company profiles
●Prints mailing labels.
●Runs on IBM XT/ATs.
Order by Mail today from:

InfoDiscs
3007 Bryant/ste. 5
Palo Alto, CA 94306
415-463-2212
415-494-8046 (FAX)
1-800-755-2212

$39.95
+ $ 2.71 CA Tax
3 1/2" or 5 1/4"

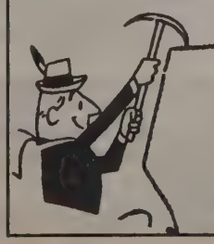
JOBS OFFERED

Shipping receiving for small distributor. Post transactions, prepare documentation, detail oriented. San Francisco 415-861-8337.

JOBS WANTED

WANTED. Any part time job in UNIX/NETWORKING/DOS, System Administration, Support, Programming, anything... Call Bimal Patel (415)965-7910.

MICROTIMES



MicroTimes Classifieds Will Help You Reach The Top Faster! Call Dana Today (510) 934-3700

HARDWARE

MACINTOSH AND IBM-PC consulting and training. Beginner, inter, sm business. Database/spreadsheet setup. MAC: Excel, Filemaker, Dtp, WriteNow, Macwrite, Word4, Macdraw, Reflex, others. IBM: Beg/inter DOS, Foxbase, Dbase, Wordperfect, Excel. reas. rates. Call Gerald at 415-552-5120 (SF) for your needs.

***30 DAY SYSTEM* 90's approach to relational database programming.** Menu driven. Totally user friendly your application is completed on time or it's FREE! Call, Listen to our message. If you like what you hear, leave your name and number and we will get back to you promptly (408) 428-0944.

Fast Printed Circuit Boards. PCB's designed, film generated and optional prototypes delivered in 5 working days from $495. Jericho Technologies (415) 949-3341.

Printed Circut Design. 15 yrs. experienced. Low prices. From Schematic or Netlist to films. Call Diane at (510)829-3170.

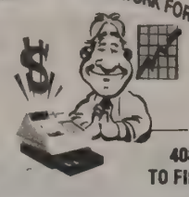
CONSULTANTS NETWORK

GENERAL

LOOKING FOR SMALL BUSINESS SOLUTIONS?

LET US MAKE YOUR PERSONAL COMPUTERS WORK FOR YOUR BUSINESS

PAY ONLY FROM INCREASED PROFITS



HATCH

CALL 408/226-2646 TO FIND OUT HOW!

Specialists in Small Business Improvements

CompuSpa **Personalized Macintosh Support**

(415) 324-4676 (510) 792-2840

Training - Basic/Advanced **Purchase Advice** - H/W, S/W

System 7.0 - Install, Problems **Install** - H/W, S/W, Upgrades

Any questions, problems, troubleshooting

At your place, throughout the Bay Area

DOS 5.0 • Windows 3.1 • OS/2

SOFTWARE INSTALLATION & CONFIGURATION - $30.00/hour

Database & Spreadsheet programming

Excel - Paradox - Lotus 123 - dBase - PageMaker - MS Word

Professional technical services for business

DATA RECOVERY - INSTRUCTION - UPGRADES - DEBUGGING

John Purins 415-571-8673

SMALL BUSINESS CONSULTANT

Small Business Automation and Training

- Accounting Applications
- Windows 3.0
- WordPerfect 5.1

References available

- On-Site PC Repair
- Low-Cost Novell Networks
- Custom Programming

Free Initial Consultation

EAS-Y Computing (415) 668-2318

COMPUTER MANAGEMENT

- System Integration
- On-site Maintenance
- Network Solution
- Office Automation
- Business Application
- Point of Sale System
- Custom Programming
- Training and Support

PS Consulting Services

(415) 521-6221 (24 Hrs.)

GET MORE OUT OF YOUR COMPUTER!

Friendly computer wizard with experience will help maximize your use of:

- Accounting
- Word Processing
- Database
- Spread Sheet

Free first consultation • Sampson Information Systems

415/469-9852

Diamond System

Novell, Lantastic, Dbase, Fox, Clipper, Visual Basic, AutoCAD, Windows, etc.

Call 415-331-9171

NEED MONEY? A Quick Easy Loan! Good or Bad Credit OK. Rea Estate Loans. 1st, 2nd, and 3rds $10K and up. BROKER. CALL 24 hours/day. 7days/wk 800-869-8176.

PC Consulting for Hardware & Software Installation, data recovery and optimization. paradox database and custom programming (510)796-4173.

First Computer Aide for Purchase, setup, and use of PCs $20/hr (510) 276-5209.

Windows, Windows and DOS Application Installation and System Tuning, Tutoring. 408-985-0136.

IBM CUSTOMIZATION and tutoring $10/hour. DOS, spreadsheets, database applications, MIDI. Experienced. Steve Jones 415-756-8431.

SMALL BUSINESS SUPPORT. Expert help in the selection, setup, and use of small computer systems and software. Custom business applications and network support. Free 1/4-hr consultation. Sabe Systems, Inc. San Jose 408-971-9967 Fax 408-971-9969.

ENGINEERING

TDS

TECHNICAL DESIGN SERVICES

MECHANICAL DESIGN CONSULTING

PHONE (415) 965-9900 FAX (415) 940-1470

CYBERSOFT

TEST AUTOMATIONS

Specializing in

Turnkey Engineering & Production Test Systems

Data Acquisition & Instrument Control

Data Analysis & Display

IEEE 488/GPIB Programming

Call for a FREE Demo Disk

(408) 272-2927

LAN

LAN Hardware/Software Installation, maintenance, and solutions.

Call NetWork Ideas (408)374-2779

NOVELL C.N.E. Netware Installation, maintenance, and trouble shooting, Free initial consultation. LAN Solutions (415) 579-1004.

TCP/IP, Sun NFS, UNIX Network/System administration support, Internet email & sendmail, Installation, configuration, and OS upgrades, X11R5, X terminals, and public domain software, Training, backups, 8 years experience, Free consultation Robert Harker, (408) 295-9432.

WHEN IT'S MISSION CRITICAL . Call the best LAN/WAN professionals at Forest Neocom Corporation, member ACM/IEEE. (510) 234-4FNC.

NetPro, Novell CNE's. Specializing in the resale and Installation of LANS, WANS, SAA, and SNA. Low prices 1-800-400-8484.

Free LAN Installation/ Internetworking Analysis. you must be the end-user of the network. Companies with large installations may apply but are limited to one installation each. Nothing to buy, no contracts to sign. Offer expires 5/15/92. Call for details. 510-656-5376 xLAN.

Inexpensive Novell Networks. We can help your company share computer resources at reasonable prices. Please call Ernesto (415) 668-2318.

PROGRAMMING

Does your program need to use a **modem**?

RS-232 asynch, C, assembly

connect or complement xBase, Paradox, Lotus, whatever

Call Arlington Computing **(510) 284-9033**

LEGAL

IMMIGRATION

Law Offices of Paul N. Haller

Specializing in

Labor Certification & Work Visas for Engineering, Computer, Accounting, Business, & other Professionals.

Also: family visa/US spousal cases; change to student (F-1) status; Treaty Trader/Investor (E-1/E-2); Intra-company transferee (L-1).

Individual, Bus. & Corp. Clients

Free Consultation!

415-291-8000

PROGRAMMING

dBASE Fox BASE

PRIVATE PROGRAMMING INC.

(510) 680-5291

CLIPPER PARADOX

Windows 3.0 Professional Group GUI Design, Networking, TCP/IP, Novell, Images, PCX, dBase. Complete Solutions for your Business. (415) 497-1319.

Costly to design, develop, fix? From your idea to a full software pkg. Aryan (415)491-1278.

PROGRAMMING

CUSTOM PROGRAMMING

- dBase/Foxbase/Clipper
- Accounting Systems
- Bar Code Systems
- Multi-user

NETWORK INSTALLATIONS

- Novell Authorized
- Hardware/Software
- Training

SINCE 1983 • MEMBER BBB

AccounTech

408/995-5511

PROGRAMMING WIZARDS Windows, Clipper, C, dbase, Commercial applications development specialists. Networking & communications. Brochure/Demonstration 707-769-1553.

Clipper 5. programming/training. Kathy Uchman (technical editor for Booth/Lief/Yellick's 'Clipper 5: A developer's Guide'). (510)798-2221.

Custom Programming in C, Clipper, Dbase. Complete solutions for your business. Ask us how. Reasonable Rate. FREE consultation 415-239-0242.

VALUE PROGRAMMING. Attractive rates. Quick turnaround, offsite, C, dBase, FoxPro, Oracle, Paradox, more. Hastack Systems 415-441-4891.

SOFTWARE

SOFTWARE MAGICIAN-Specializing in corporate/small business training in Word Processing and Database Management. Paradox programming, WordPerfect automation. Brown Associates, (415)763-4246

TECH WRITING

DOCUMENTATION

ProDoc is your one-stop solution

• Writing • Design •

• Production •

Call Jann 510-654-4082

uunet.uu.net!omsys!jann

TECH WRITING

Dr. DOCUMENT

House calls for ailing

-Product Help, Guides,

-Manuals, Specifications,

-Document Management

(510) 527-8736

Have MAC/PC Will Travel

MicroTimes Classifieds

Work

Call Dana

(510) 934-3700

For Details

Technical Writing/Desktop Publishing Hardware/Software manuals, marketing brochures, newsletters, fliers. We have the expertise to do your job right. Try our professional services. Sabe Systems, Inc. San Jose 408-971-9967 or Fax 408-971-9969.

Technical documentation can be on-time, on-budget and on target with the needs of the end-user. The earliest possible planning is required to make this happen. We can beat the rate of compatible services. Fixed-price bids are available under limited circumstances. For a full-service technical writing company, call now (408) 773-1954.

MICROTIMES

- Save the trees - On-line help -- Computer Tutorials
- Quick catalogs and lists - Database Publishing
- Sell! Sell! Sell! - Marketing/Sales Promotion
- Reduce support costs - User -- Training Manuals

Computer Solutions -1 800 585-3805 - Free Demo Disk

CONSULTANTS NETWORK

TRAINING

MICROTIMES

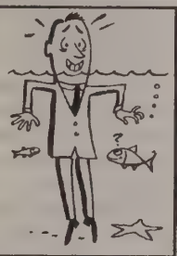
ON-SITE/ OFF-SITE PC Training
Low Indv.& Group Rates!!!
(510) 283-6221

BROWN ASSOCIATES
MicroComputer Consultants
Training and Production in WordPerfect, Paradox and Desktop Publishing Packages
Simply the Best!
Phone 510/763-4246

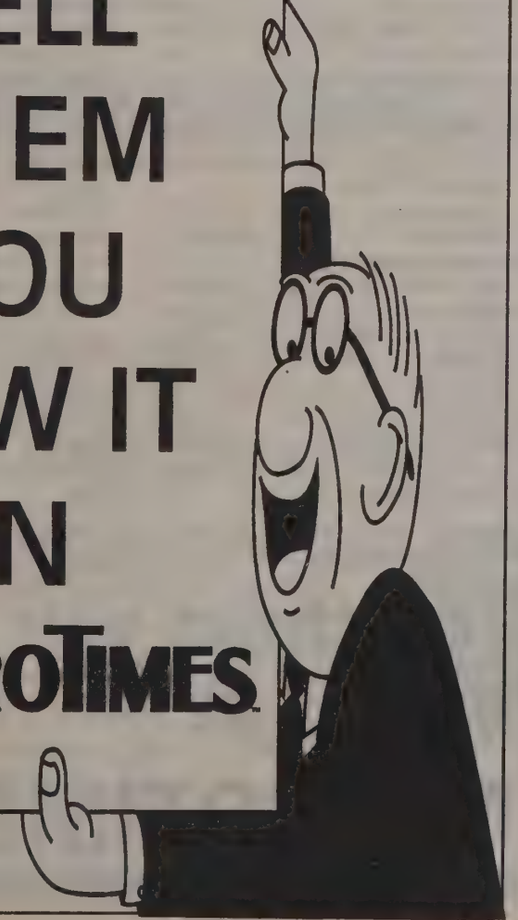
MACINTOSH AND IBM-PC training. Beginner, inter, sm business. Why go to one of those big classes and feel intimidated. Learn at home at your own speed, just the things you want to learn. Reas. rates and ref. For more information. Call Gerald at 415-552-5120 (SF).

Training—On-Site Or Here!
Need to understand your computer better?
★ Software? ★ Hardware?
Learn from professional instructors!
TRAINING UNLIMITED
1376 32nd Ave.
San Francisco, CA 94122
(415) 753-1848

MicroTimes Classifieds won't let this Happen to your Business. We Reach Over 192,000 Readers with Every Issue Call Dana Today!
(510) 934-3700



TELL THEM YOU SAW IT IN MICROTIMES



HERB'S DISCOUNT SOFTWARE
THE LARGEST SOFTWARE STORE IN THE BAY AREA

- ★ 100s OF SELECTIONS FROM MAJOR MANUFACTURERS
- ★ CURRENT TITLES AND DISCONTINUED ITEMS
- ★ FOR POPULAR COMPUTERS: IBM, MAC, APPLE, ATARI, COMMODORE, AMIGA
- ★ DEALER & DISTRIBUTOR OVERSTOCKS
- ★ LOW-COST DISKS & ACCESSORIES
- ★ PUBLIC DOMAIN & SHAREWARE LIBRARIES
- ★ BANKRUPTCIES, OVERSTOCKS, DISTRESS

OVER 1000 TITLES UNDER $10.00

SAVINGS TO 95% OFF ORIGINAL PRICES!

A FEW REASONS YOU SAVE AT HERB'S

- We buy for less
- We pay ourselves less
- We drive little cars
- We don't heat our warehouse
- We pay low rent
- We clean our own store
- We live in modest homes
- We run little, cheap ads
- We don't borrow money
- We think 60 watts is bright enough
- We eat off lunch wagons
- We work long hours
- We don't have an ad agency
- We don't wear clothes you can't wash
- We married gals with cheap tastes

A FEW MORE REASONS YOU SAVE AT HERB'S

SPECIAL $7.50 (3 FOR $20.00) IBM
Many, many titles have sold for as much as $200-$300 or more. These are not used or incomplete... most have never been opened. They're factory-sealed and many are highly rated. They'll still job. Entertainment, educational, busines utilities, etc.

SPECIAL IB
A wide sel sold

APPLE II BEC
Wide

CHECK OUT HERB'S IBM, MAC & APPLE
3 FOR $20 SECTION
Many New Titles Added This Month

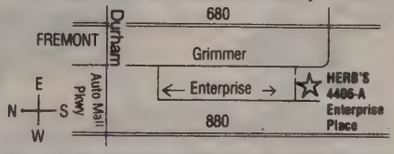
We sell is 2.00 each

HIGHER PRICED TITLES TOO!
Don't think we're only selling older titles... NOT TRUE. HERB'S has hundreds of the most current programs available, but not one of them is priced at anywhere near suggested selling prices! WE DISCOUNT EVERYTHING.

take a look, make the trip

FAMOUS **COUPON**

HERB'S DISCOUNT SOFTWARE
CALIFORNIA'S LARGEST SOFTWARE LIQUIDATOR
OPEN MON-SAT 10 AM-6 PM, SUN NOON-4 PM
4406-A ENTERPRISE PLACE, FREMONT (510) 490-6335



FREE* DISK FILE
*WITH PURCHASE OF $10.00 OR MORE
3½" or 5¼" CLEAR PLASTIC CASES, HOLD 10 DISKS EACH
LIMIT ONE PER CUSTOMER
EXPIRES 5/15/92
REG. $2.50

LET YOUR COMPUTER DO THE SHOPPING!
Have Your Modem Dial Herb's On-Line Software Shopping Service - (510) 490-6109

ADVERTISERS INDEX

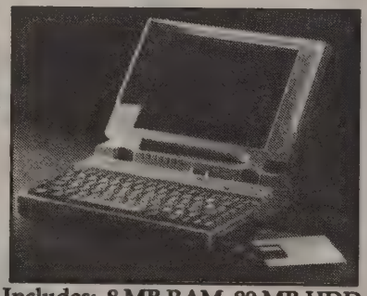
A & A COMPUTER, INC. 224
ACCESS COMPUTER TECHNOLOGIES 131-130
ACR SYSTEMS 95
ADDTECH RESEARCH, INC. 59
ADVANCE COMPUTER SYSTEMS 4,5
AIM COMPUTERS 197
ALLTEK COMPUTERS 203
ALPHA BUSINESS SYSTEMS 46
ALPHA FINE COMPUTER FURNITURE 184
AMERICAN MULTI SYSTEMS 7
AMERICAN RELIANCE 8
AMT INTERNATIONAL 76,77
ANOVA MICROSYSTEMS 173
ARGO COMPUTERS 250
AROMA TECH, INC. 92
ASA COMPUTERS 82,83
ASP COMPUTER PRODUCTS 18,22
ATEL COMPUTER 89
ATMAN COMPUTERS 15
ATP ELECTRONICS 201
AUTHORIZED TECHNICAL SERVICES 210
AXIK COMPUTER 97
BAY COMPUTER 245
BELMONT SYSTEMS, INC. 236,237
BERLIN TECHNOLOGY 84
BETA NINETIES COMPUTER 117
BLACKSHIP COMPUTER 75
BONA INTERNATIONAL SYSTEMS, INC. 14
BOSS COMMUNICATIONS 78
BOZEMAN MARKETING GROUP, INC. 196
BUSH COMPUTERS 201
BYTE SIZE STORES 56
CALIFORNIA MEMORY & COMPONENTS 207
CATAPULT SYSTEMS 44
CBI 163
CENTRAL COMPUTER SYSTEMS 212-214
CENTURIAN SURPLUS, INC. 38
CERTIFIED NETWORK EDUCATORS 210
CLUB PC 123
COLFAX 51
COMET MICRO SYSTEMS 87
COMP USA 25
COMPUTER ART 80
COMPUTER H Q 192,193
COMPUTER RESOURCE CENTER 208
COMPUTER SELECTION 233
COMPUTER SHOWCASE 199
COMPUTER SWAP 58
COMPUTERLAND OF FREMONT 216,217
COMPUTERLAND OF SERRAMONTE 27
COMPUTERTIME 56
COMPUTOWN 52,53
COMTEK COMPUTERS 74
COPAM USA 168
COPO, INC. 65
CORPORATE SYSTEMS CENTER 9
CYBERTRON COMPONENTS 240
DOMINO COMPUTERS 39
DOMINO SELF SERVICE CTR. 11
DOWNSIZING/RIGHTSIZING EXPO 253
DUBLIN COMPUTER SYSTEMS 47
EFI'S DISCOUNT COMPUTER 98
ENCY SYSTEMS 29
EVERGREEN COMPUTER INT'L. 204-206
FASTLINK NETWORK PRODUCTS 175
FRED HANEY COMPUTERS 255
FRY'S ELECTRONICS 2,133-158,267
GEMS COMPUTER 195
GENERIC COMPUTER SYSTEMS 224
GENOA SYSTEMS 21
GIGABYTES 226
GRAND TECHNOLOGIES 61
GUITAR SHOWCASE 177
H D SYSTEMS 31-34
H. CO. COMPUTER PRODUCTS, INC. 114
HALTED SPECIALTIES 211
HERB'S DISCOUNT SOFTWARE 263
HI-TECH USA 100,101
HIQUALITY SYSTEMS, INC. 170,171
HYDRA SYSTEMS 3
ICS COMPUTERS 79
INPUT AUTOMATION 72
I-TECH TECHNOLOGY 88
JEMINI ELECTRONICS 242,243
KING STAR COMPUTER 17
KRAY CABLING 250
LAITRON COMPUTER 231
LEOPARD MICROSYSTEMS (formerly Legend Microsystems) 164,165
LIBRE SERVICES COMPUTER, INC. 81
MACOUTLET CORPORATION 209
MARKET PRO 222
MAXELAN, INC. 10
MCC SYSTEMS, INC. 235
MCTEK SYSTEMS 85
MEMORY SOURCE INTL. 258
MERCURY COMPUTER 118,119
MICRO DATA TECHNOLOGY, INC. 69
MICRO DISTRIBUTION CENTER 94
MICROAGE OF SAN FRANCISCO 126,127
MICROLINE 247
MICROLINK DATA SYSTEMS, INC. 178-181
MICROWORLD 241
MIRACLE COMPUTER 185
NCA PERIPHERALS 73
NETWORK ASSOCIATES CORP. 55
NETWORK INNOVATIONS 23
NORDIC COMPUTERS 265
PACIFIC STANDARD TIME 125
PALO ALTO MICRO 38
PAN PACIFIC COMPUTER CORP. 90,91
PARADINE COMPUTER SYSTEMS 256
PARS INTERNATIONAL COMPUTER 228,229
PC BY ROOT 187
PC CARE 223
PC CHOICES 63
PC TEAM 183
PC WAREHOUSE 19
PERELINE DATA SYSTEMS 116
PETRONICS INTERNATIONAL 264
PIXEL USA COMPUTER 121
POLYWELL COMPUTERS 189
PONY COMPUTER, INC. 57
PRESTIGE COMPUTER 113
PRINTER WORKS 41
PROMOX SYSTEMS 71
QUARTERDECK OFFICE SYSTEMS 268
RAMCOMP 62
ROGER WILLIS COMPUTERS 93
RT COMPUTER 220
SANTA CLARA COMPONENTS INTL. 62
SANTRON COMPUTER TECHNOLOGY 12,13
SCHWAB COMPUTER CENTER 86
SF MICRO 45
SFSU-MRI 224
SONGTECH INTERNATIONAL, INC. 191
STANFORD SALES 254
STORAGE SYSTEMS ENGINEERING 226
SYSPER TECHNOLOGY 227
TANSTAAFL MANUFACTURING, INC. 167
TECHNOLAND 161
TEG MICRO TECHNOLOGY 174
THE SUPER LINK 219
TLC COMPONENTS 42
TOWER COMPUTER 239
TREE BASED FINANCIAL SOFTWARE 98
UNCLE RALPHS 48,49
UNITED COMPUTER SYSTEMS 221
UNIVERSAL COMPUTER PRODUCTS 190
UNSC INVESTMENT GROUP 66
USM DISTRIBUTORS 248,249
VTT COMPUTERS 28
WENTEK COMPUTER 225
WHOLE EARTH ACCESS 102-110
WINNER'S CIRCLE 37
WIT INTERNATIONAL 99
WORLD-NET MICROSYSTEMS 166
Z-TECHNOLOGY 169
ZYNK 251

"THE PORTABLE OFFICE"

HIGH PERFORMANCE NOTEBOOK — 25 MHz

THE INEX
386SXL-25 w/CACHE
Low Power Consumption
Special Offer

$3195
INCLUDES INTERNAL FAX MODEM!



Includes: 8 MB RAM, 80 MB HDD, 10" VGA 64 Gray Scale Screen

- 25 MHz CPU, 8 MB RAM and 80 MB Hard Disk
- Large 10" VGA LCD Display with 64 Gray Shades
- MS-DOS 5.0, 32 KB Cache RAM, NiCad Battery, Power Adapter and Carrying Case
- Only 5.7 lbs. Includes Battery; Power Management Features
- I/O Ports Include: Serial, Parallel, External PS/2 Mouse, Keyboard, VGA Monitor and XT Bus Connector
- Ideal For Windows Applications
- Options include Numeric Co-Processor, Data Modem, and Additional Battery Packs
- Standard One Year Limited Warranty with Two Year Option

PETRONIC INTERNATIONAL, INC.

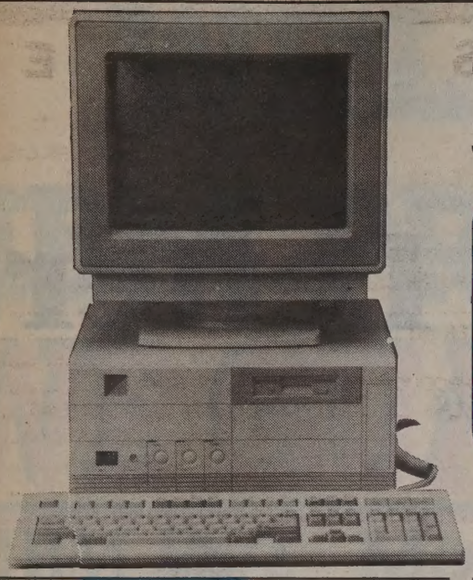
2300-C ZANKER RD.
SAN JOSE, CA 95131
Dealer Inquiries Welcome

TOLL FREE- (800) 947-INEX
Tel: (408) 943-1717
Fax: (408) 943-0430

MasterCard VISA

This index is provided as an additional service. Although we do our best to maintain accuracy, the Publisher does not assume liability for errors or ommissions.

Tell them you saw it in MICROTIMES!



OVER 14,306 SYSTEMS SOLD!

Recommended Dealer
S.F. Chronicle Examiner, Feb. 25, 1990
Computer Currents, Feb. 26, 1990
Computer Currents, July 5, 1990

NORDIC COMPUTERS

FAN NOISE

NOISE KILLER™-Keep Your Office Quiet
Included with all 386-33DX/120MB SVGA and above systems

GREAT VALUE

386-25 System

Complete System
w/Hard Drive & Super VGA Monitor

25 MHz
4 MB RAM, expands to 8 MB
IDE Hard Drive
Super VGA Monitor .28dp
1.2 & 1.44 MB Drives
Enhanced Keyboard
2 Serial, 1 Parallel Port
Socket For 387 Processor
DOS 5.0 w/Manual

SVGA 80MB	SVGA 120MB	SVGA 170MB
$1459	$1509	$1599

GREAT PRICE

386-33 System

Complete System
w/Hard Drive & Super VGA Monitor

33 MHz
64K Cache Memory
4 MB RAM
IDE Hard Drive
Super VGA Monitor .28dp
IDE Hard Disk Drives
1.2 & 1.44 MB Drives
Enhanced Keyboard
2 Serial, 1 Parallel Port
DOS 5.0 w/Manual

FAN NOISE

SVGA 80MB	SVGA 120MB	SVGA 170MB
$1545	$1645	$1735

GREAT PRICE

486-33 System

Complete System
w/Hard Drive & Super VGA Monitor

486-33
4 MB RAM
IDE Hard Drive
Super VGA Monitor .28dp
1.2 & 1.44 MB Drives
IDE Hard Disk Drives
2 Serial, 1 Parallel Port
Enhanced Keyboard
Tower Case
DOS 5.0 w/Manual

FAN NOISE

SVGA 80MB	SVGA 170MB	SVGA 340MB
$1965	$2099	$2675

Custom Configurations Available

386SX-25 System

w/Hard Drive & Monitor

25 MHz
2 MB RAM
IDE Hard Disk Drive
1.2 & 1.44 MB Floppy Drive
Enhanced Keyboard
2 Serial/1 Parallel Port
DOS 5.0 with manuals

SVGA 40MB	SVGA 80MB	SVGA 120MB
$1199	$1299	$1349

386SX-16 System

w/Hard Drive & Monitor

16 MHz
1 MB RAM
IDE Hard Disk Drive
1.2 & 1.44 MB Floppy Drive
Enhanced Keyboard
2 Serial/1 Parallel Port
DOS 5.0 with manuals

Mono 40MB	VGA(.41) 40MB	VGA(.41) 80MB
$799	$999	$1099

286 System

w/Hard Drive & Monitor

16 MHz
1 MB RAM, expands to 4 MB
IDE Hard Disk Drive
1.2 & 1.44 MB Floppy Drive
Enhanced Keyboard
2 Serial/1 Parallel Port
DOS 5.0 with manuals

Mono 40MB	VGA(.41) 40MB	VGA(.41) 80MB
$699	$899	$999

System Add-Ons

2400 Baud Modem	$89
Logitech "MouseMan"	$79
Additional 3 1/2 or 5 1/4 Floppy Drive	$69
Additional Memory, per MB	$45/55
Noise Killer Installed On New Nordic System	$49

Serving the Bay Area for over 6 years.
"We're committed to providing the best after-sale support & service in the business. I guarantee your satisfaction."

Andy Jakobsen
Owner

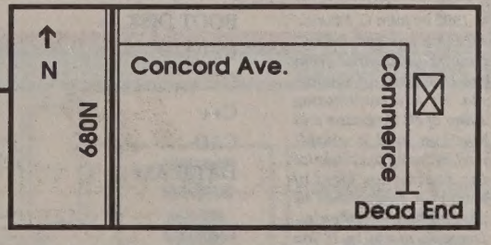
#1 In Contra Costa County

5 Year In-Store Labor Warranty
1 Year Warranty On Parts

Nordic Computers
2170 T & U Commerce Avenue, Concord, CA 94520
(510) 687-3050

Prices subject to change without notice.
DEALER INQUIRIES WELCOME.

VISA MasterCard



M-F 10:00-6:00 • open Sat. 10:00-4:00

Dear John Letters

The Dvorak Mailbag Overflows With Love: A Sampler

BY JOHN C. DVORAK

DVORAK'S LAST COLUMN

LATE CALLS AND FLOPPY OVERFLOW

Dear John:

1. I got a call at 6:30am Wednesday morning from a person from Borland wanting to give me this fantastic opportunity to upgrade to dBASE IV 1.5. (This was his second call). I got on the phone and explained it was 6:30 in the morning and I wrote the review of the product for a magazine (*PC Sources*). He asked if there was someone else in the organization he could talk to. He finally realized "this call is going nowhere."
2. Disk duplicators are complaining they have faced two price increases on 720K diskettes in less than one month, with the prices rising a total of 6 cents a diskette. The duplicators are thinking forced shortage.
3. IBM and Microsoft have cornered the diskette market. Microsoft is gobbling about 10 million diskettes this month, 6.5m for Windows 3.1 alone (6—3.5 per package, 7—5 1/4 per package). IBM is reported to have about 10M diskettes for the OS/2 rollout (would represent 500,000 copies).
4. Tom Rawson (JP Software—4DOS) wonders what is the environment impact of these two major rollouts, manuals and diskettes hitting the landfills...

Chris Devoney

I wonder when we'll see a biodegradable floppy disk!

© 1992 by John C. Dvorak. All rights reserved. *John C. Dvorak graduated from the University of California. He is a contributing editor of* PC Magazine *and* MacUser, *and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

THE DEVIL'S COMPUTER DICTIONARY

Dear John,

I know you once had a listing of computer definitions, so here's mine:

Computer Terminology for the Compleat Idiot

APPLICATIONS	Resumes
ARCNET	How Noah Caught Fish
ASCII	Inquire
BASIC	Simple
BENCHMARK	A Scratch On A Work Table
BOOT DISK	To Kick A Record
BYTE	Done Before Chew
C	Between "B" and "D"
C++	Definitely Between "B" and "D"
CAD	Not A Gentleman
DATABASE	Something Said While Pointing At Home Plate
DEBUG	The Insect
DOS	One More Than Uno
FILE SERVER	Office Clerk
GUI	Sticky
HARD DRIVE	A Difficult Journey
KEYBOARD	Where To Hang Up Your Keys
LAN	Where You Build A House
MEMORY MANAGEMENT	Taking Notes
MICRO CHANNEL	Television Station For Small TV Sets
MICROPROCESSOR	A Tiny Person Who Handles Paperwork
MOUSE	Something A Cat Plays With

[More later]

James E. LaBarre

With guys like this to supply me material I never have to write anything!

MODEM TAXATION!

Dear John,

I have just discovered that the FCC is considering a proposal which would result in a tax on modem and Fax use. Can you imagine? If you feel as I do, please pass along the word as I am doing and consider writing the proposed letter to both of these addresses. I decided to use this letter verbatim. I apologize for the cost of the Email time if I've offended you.

Chairman of the FCC
1919 M Street NW
Washington, DC 20554
or
Chairman House Telecommunications Subcommittee
B-331 Rayburn Building
Washington, DC 20515

Dear Sir:

Please allow me to express my displeasure with the FCC proposal which would authorize a surcharge for the use of modems on the telephone network. I feel that this regulation could be construed as an attempt to restrict the free exchange of information among computer users. Calls placed using modems require no special telephone company equipment and users already pay for the use of phone company equipment and telephone charges while online in the form of a monthly bill. In short, a modem call is the same as a voice call and should not be subject to any additional regulations or charges.

Sincerely,
(Your Name Here)

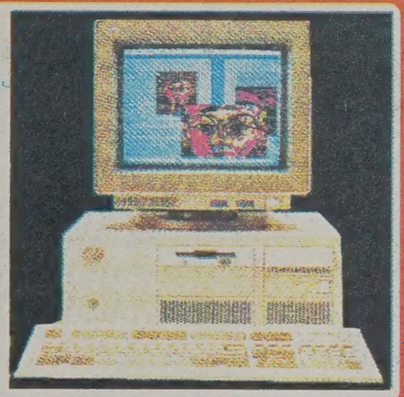
Thanks

Richard J. Brooks

WE'LL BEAT ANY IBM PRICE IN TOWN WE GUARANTEE IT!!!

IBM Business Partner
Authorized Personal Computer Dealer

IBM PS/2 Model 35SX
IBM 8518 DISPLAY



20MHz 80386SX Processor
2MB RAM Expandable to 16MB
1.44 MB 3.5" Floppy Disk Drive
IBM 8518 Display
VGA on Mother Board ▪ Serial/Parallel Ports
Clock/Calendar ▪ 101 Key Keyboard
3 AT Bus Slots
#1671986

$1699

Model L40SX
20MHz 386SX
60MB LAPTOP

20MHz 80386SX
2MB RAM Expandable to 18MB
3.5" 1.44MB Floppy Disk
60MB 19ms Hard Drive
640 X 480 VGA with 32 Gray Scale
84-Key Keyboard
Serial/Parallel /Mouse Ports
#1606120

$2199

IBM PS/2
Model 35SX
40MB VGA SYSTEM
W/ 8512 IBM VGA DISPLAY

20MHz 80386SX Processor
2MB RAM Expandable to 16MB
3.5" 1.44MB Floppy Disk Drive ▪ 40MB IBM Hard Drive
IBM 8512 VGA Display ▪ VGA on Mother Board
Serial/Parallel Ports ▪ Clock/Calendar
101 Key Keyboard ▪ 3 AT Bus Slots
#1671997

$1899

IBM PS/2
Model 35SX
40MB VGA SYSTEM
W/ 8518 IBM VGA DISPLAY

20MHz 80386SX Processor
2MB RAM Expandable to 16MB
3.5" 1.44MB Floppy Disk Drive
40MB IBM Hard Drive IBM 8518 VGA Display
VGA on Mother Board
Serial/Parallel Ports ▪ Clock/Calendar
101 Key Keyboard ▪ 3 AT Bus Slots
#1672002

$2199

IBM PS/2
MODEL 57SX
20MHz 386SX
80MB HARD DRIVE

80386SX 20MHz CPU ▪ 5-16 Bit Micro Channel Slots
4MB RAM Expandable to 16MB
80MB 17ms Hard Disk Drive
3.5" 1.44MB Floppy Disk Drive
VGA On Mother Board ▪ Serial/Parallel Ports
101-Key Keyboard ▪ Clock/Calendar
Monitor Not included
#1636679

$2399

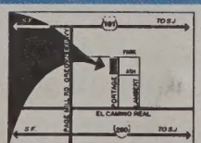
HOME OF FAST, FRIENDLY, COURTEOUS SERVICE

Fry's ELECTRONICS

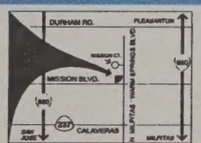
Prices good through April 7, 1992

Limit Rights Reserved Not Responsible For Typographical Errors

SUNNYVALE
1177 Kern Ave.
(408) 733-1770
CORPORATE P.O. FAX #
(408)735-6800



PALO ALTO
340 Portage Ave.
(415) 496-6000
(415) 496-6060



FREMONT
440 Mission Ct.
(510) 770-FRYS (3797)
(510) 770-3700

VISA
MasterCard
VISA and MasterCard ACCEPTED

STORE HOURS
MONDAY - FRIDAY
8AM - 9PM
SATURDAY
9AM - 8PM
SUNDAY
9AM - 7PM

"The Best Memory Manager"

It's an easy claim to make, but we have the facts to back it up:

Our new QEMM-386 version 6 is the best way to get the most out of memory. It 'pools' all your memory so that it's available in whatever form your programs need—expanded or extended. You don't even need to know the difference. QEMM does it all for you. Instantly. Whereas DOS 5, for example, requires you to figure out what you need, then manually allocate memory and re-boot every time you need to change.

> "It's nothing less than a dream come true"
> —*Steve Gibson InfoWorld 8/26/91*

As for the all-important 'conventional' memory area, our new version 6 increases the amount of memory freed-up. Our exclusive 'optimize' feature automatically seeks out TSRs and device drivers and moves them into high memory—the area between 640K and 1 megabyte. All you need do is type 'OPTIMIZE'.

PC Week Ratings	All Charge 386 3.2	Netroom 2.10	QMAPS 2.0	386Max/ BlueMax 6.00	QEMM 6.01 Analyst's Choice	Memory Commander 2.1
Software Compatibility	●	●	◔	●	●	●
Hardware Compatibility	●	●	●	●	●	●
Reliability	◔	●	◔	●	●	◔
Ease of Use	●	●	●	●	●	●
Memory Management Flexibility	●	●	●	●	●	●
Quality of Documentation	●	●	●	●	●	●

● GOOD ◒ SATISFACTORY ◔ NEEDS IMPROVEMENT

PC Week rated QEMM 6 the best memory manager.

PC WEEK ANALYST'S CHOICE

INFO WORLD PRODUCT OF THE YEAR 1991

PC MAGAZINE EDITOR'S CHOICE
QEMM 6
February 11, 1992

W 100
WINDOWS MAGAZINE 1992 WIN AWARDS

Our latest awards.

QEMM-386 v6 finds more high memory than any other memory manager. *Byte Magazine's* tests showed it produced net memory gains of 21K to 132K over DOS 5.0 alone, for instance.

Stealth takes you to network and TSR heaven.

Our breakthrough 'Stealth' technology makes available areas normally taken up by ROM. Areas that QEMM-386 can use to load memory-hogging drivers and TSRs. Big programs can get the memory they need to run fast and efficiently. And you get to have your TSRs.

Not every PC can benefit from Stealth. But every PC can benefit from *'Squeeze'*—our new feature to accommodate those TSRs that need more memory at start up and less when they're resident. Memory allocation is temporarily increased, then squeezed down after it's needed.

#1

QEMM is the number one selling PC utility.

QEMM can use idle video memory to produce a further 96K gain on EGA and VGA systems when running character-based programs.

A priceless $60 bonus.

QEMM comes with Quarterdeck Manifest, the award-winning analysis program that shows what's going on 'under the hood' of your PC.

Manifest does for memory what Norton Utilities does for disks.

Big Benefits for Windows users, too.

Whether you're running DOS 3, 4, 5, or Windows, QEMM can improve your 386/486's performance.

That means you may not need a faster CPU. You may not even need more RAM. QEMM makes your favorite programs work better by giving them more memory.

QEMM helps you get the most out of the software you own today.

Quarterdeck

©1992 Quarterdeck Office Systems. PC Week Analyst's Choice Logo, ©1991, Ziff Communications Company. PC Week is a registered trademark and the PC Week Analyst's choice logo is a trademark of the Ziff-Davis Publishing Company. Other trademarks are property of their respective owners.
Key to comparison table: Software compatibility is defined as the product's ability to run without problems with the operating systems PC Week Labs used in testing, MS-DOS 5.0, IBM PC DOS 5.0 and Microsoft Windows 3.0, and with a variety of application software, including Quarterdeck's DESQview 2.40, Xerox Ventura Publisher 3.0 for DOS, WordPerfect 5.1 and Artisoft's LANtastic 4.0. Hardware compatibility is defined as the programs's ability to run on PC Week Lab's test hardware platform, which included a 33MHz 486-based PC and a 25MHz 386-based IBM PS/2 Model 70. Reliability ratings are based on the successful and dependable performance of each operating system and application-software package under each memory manager. Ease of use is based on ease of installing and configuring each program, based on support for automatic loading features and the intuitive narure of the interface. Flexibility in managing memory is rated on the range and quality of the product's features in optimizing system performance and handling special-case installation. Quality of documentation is judged by the clarity, comprehensiveness and helpfulness of the documentation provided with the product, based on the organization of the manuals as well as the thoroughness of definitions, directions and explanations, and the inclusion of troubleshooting information.

CompUSA
San Bruno (415) 244-9990
Santa Clara (408) 554-1733

Fry's Electronics
Sunnyvale (408) 733-1770
Palo Alto (415) 496-6000
Fremont (415) 770-3797

800-Software
Berkeley (800) 888-4880

PC by Root
San Mateo (800) 347-0343
San Francisco (415) 923-0343